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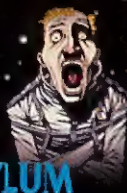
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COVER: Our Science Fiction Age cover girl is green with envy. Art by Rick Berry.
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The party's over now— It's time to call it a day.

THIS IS THE HARDEST EDITORIAL I'VE EVER had to write. Since 1992, I've written almost 100 of these brief introductions, not only for this magazine, but for *Sci-Fi Entertainment*, *Rampage*, *Sci-Fi Universe*, and *Sci-Fi Flix* as well. But before all those others, there was *Science Fiction Age*, and now we must all say goodbye to the magazine that launched the Sovereign publishing empire. Life goes on, but *Science Fiction Age* does not.

This, our May 2000 issue, will be the last issue of *Science Fiction Age*. I started working on the magazine in the prehistoric days of September 1991, and though there was a lot of scoffing over the next year that we'd never make it, our first issue, dated November 1992, debuted at MagiCon, the 1992 World Science Fiction Convention held in Orlando, Florida. We tried to drag the format of a Science Fiction magazine kicking and screaming into modern times, while never losing sight of that good old sense of wonder. We published hundreds of stories in 46 issues over the years, with authors ranging from Jack Williamson, who published his first short story in 1928, through the very first sales of beginning writers. Along the way, our pages included numerous Hugo and Nebula Award finalists, plus one Nebula Award winner. I am very proud of our effort. We gave it our best shot in a fiction-unfriendly marketplace.

Don't worry about Sovereign, though. The *Age* sister magazine *Realms of Fantasy* and our other titles remain strong. Lovers of the Fantasy short story have fewer sources for their drug of choice, and so as the only full color, glossy, national Fantasy magazine, *Realms* has enjoyed a monopoly on your attention that *Age* could never claim.

Sadly, it's been over a decade since an SF magazine has had a circulation topping 100,000 copies per issue, and all titles have been falling further in circulation with each passing year. Independent distributors close and merge every year, meaning fewer outlets to reach the public. Who knows what the future will bring? I wish that we could have been there to help deliver tomorrow to you, but that was not in the cards.

This sales drop-off is not just our problem. It's also the problem of every other magazine in the field. And the problem of lovers of short fiction as well. Where will we turn if the magazines go away? I doubt that the Internet will soon be ready to support our habit.

Science Fiction writers and hardcore fans have been attempting to figure out for years

where the readers went. Aside from the distribution problem I've already mentioned, there's also the matter of SF having permeated the entire world. When I was 14, I devoured every SF magazine I could get my hands on. Fiction was the primary way in which I fed my hunger for the SF experience. Today, I look at my own son, and his friends of the same age, and do they read SF? No, when they wish to experience space warfare, or see a planet explode, they go to movies and video games. If a novel was spun off from *Star Wars*, they might give it a taste, but other than that, they stay away from the SF magazines.

One of the few good things to come out of this cancellation is that I'll be able to turn back to writing my own short stories again. I was unwilling to publish my own fiction in this magazine. I always thought it would show incredible chutzpah to say to an audience that I could not find any stories that issue better than my own—because my job as an editor was to do just that. On the other hand, when I began to edit *Science Fiction Age*, I was overcome by a strange compunction. I no longer wished to submit my short stories to the competition. If I worked for Coca-Cola, I wouldn't be sending my stuff to Pepsi, would I? Sadly, this left me in a Catch-22. That Catch-22 exists no longer. So don't worry, you'll still be hearing more from me in the future, it just won't be in these pages.

How strange, you must be thinking. Here he tells us that the SF magazines are in trouble, and then at the same time he says that he's going to go back to writing SF short stories. How can that be? Is the man a masochist? No, call me an wild-eyed optimist instead. I still think that the short story is where the most important Science Fiction is happening, and that's where I'm going. (Check out the recent DAW anthology *Moon Shots* or Penguin Roc anthology *Treachery and Treason* if you want to get a taste of what this editor can do when he's on the other side of the desk.)

Am I rambling? I guess I am. But as this is the column I never wanted to write, I hope that you'll forgive me. Because I realize that as soon as I get to the end of this page, my *Science Fiction Age* is over. As the song goes, breaking up is hard to do, and so I am having a hard time of it now. So let me just close thanking you all—readers, writers, artists, and advertisers—for a wonderful ride.

Science Fiction Age: Born 1992—Died 2000. It really has been a wonderful life.

Scott Edelman

SCIENCE FICTION AGE

VOLUME 8

NUMBER 4

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Dear *Science Fiction Age*:

James Lowder's is the second review I have read recently critical of Allen Steele's fictional near-future characters that love The Grateful Dead. Steele admitted to *Locus* magazine that he wrote "Orbital Decay," et al., while actually being a pot-smoking Deadhead. He spoke of having put that time aside and moving on; "Oceanspace" appears to be the start of Steele's second phase of authorhood.

I am concerned that Lowder, and others, don't seem to notice cultural changes right under their noses. What do we have now? Lots of people, many in "Generation X," and younger, listening and dancing to Big Band music; country music sounds like rock; r&b has lost the soulful edge it had; rap, house, et al., rule the masses—but The Grateful Dead remains meaningful to fans, many younger than the Boomers. Jerry Garcia died *after* the publication of the Steele novels that annoy Lowder.

Who can predict what the next decades of the new century will bring? Will someone clone Elvis, or The Grateful Dead, and train the clones to be The King and the guys with the "Touch of Gray"? Nobody knows. I enjoyed *all* of "Orbital Decay," et al. Does my money talk louder than Lowder?

Thornton Kimes

Dear Scott Edelman:

Two requests:

Please put the length category in the table of contents, so I can put it in my database when I rate each piece.

And second, more fiction, less pop culture, please!

S. Lama

Dear Scott Edelman:

Science Fiction Age is one of the most exciting magazines to come along since, well, maybe *Aboriginal Science Fiction*, but with much greater success. You cover a lot of interests, instead of proclaiming that SF can only be one certain thing and everything else is only pretentious trash. The full-color covers and interior art are great. The size and appearance of the magazine is modern and presentable. There used to be a lot of typos that made it past the copy editors, but that is improving. The Science column's discussion format is inspired. It's like the interesting conversations one can find and insert oneself into at Worldcons. Your Editorials are thoughtful. It's also well considered that readers of SF usually have interests other than S and F, so that the columns on Televi-

sion or Movies, Games, Alternative Media, and the Internet round out the magazine nicely and hopefully lure into written SF some who might otherwise have never discovered what they were missing.

I'm sure you've probably received criticism that all those other columns (as well as those pesky ads—what good are they, right?) take away from space for more fiction. I find there is more fiction already available than I have time for, but if there needs to be more, then more semiprozines will increase sales till they are prozines, and more magazines will both start and flourish. There certainly seems to be enough quality fiction being produced. How many submissions do you get per month? How many do you have to reject that could possibly be satisfying to readers, perhaps with slight revision? It's just one of the unfortunate realities we—readers, writers, and editors—face. The amount of Science Fiction that can be successfully published is only the amount and type readers are willing to buy.

So, keep up the good work.

James Allen

The unfortunate reality is that I receive far more submissions in a single month than could possibly be published in all SF magazines in a year! One month I received almost 1,000 stories from hopeful (and soon-to-be disappointed) writers.

Dear Scott Edelman:

Wow! *Science Fiction Age* has got to be one of the hottest Science Fiction magazines in the market today! Tonight after watching the SCI FI Channel, I sat back afterward and slipped into the realities that I found in your stories entitled "Homeless With Aliens" and "Agents of the Moon." Great entertainment!

Please continue with your top-notch, high-quality magazine—can't get any better than this!

Sincerely yours,
Paul Dale Roberts

Dear Scott Edelman:

Science Fiction Age seems to be a mix of "literary science fiction" and "media science fiction," sometimes referred to as "Sci-Fi." Here and there I've read complaints about this. I think Mr. Dozois may have quibbled about it in his most recent Best of the Year anthology. I just wanted to let you know that I think *Science Fiction Age* is great the way it is.

Here's why: I've been reading Science Fiction since I was about 12, and Asimov, Hein-

lein, Herbert, et al. provided a kind of epiphany for me. On the other hand, I went to see *Star Wars* at the age of 10 in 1977. So I guess I'm a fan of both branches of the genre, the "conceptual" and the "visual." At the age of 10 and 12, however, it all seemed like the same thing to me. Sometimes it still does, as with the recent *Bicentennial Man*.

I buy *Science Fiction Age*, as well as *Asimov's* and *Analog*, every issue at my newsstand. I'll continue to do so as long as you guys keep publishing them.

Thanks for a great magazine.

Regards,

Thomas A. Haberkern

Dear *Science Fiction Age*:

I very much enjoyed your coverage of *Farscape*. I have been a Science Fiction fan for over 50 years, and have read and viewed a lot of it. Most Science Fiction, both in books and visual media, is plot or situation driven, with flat two-dimensional characters whose purpose is only to move the plot lines. This failing is not unique to Science Fiction; it is pervasive in movies and TV, which abound with absolutely stereotypical stick figures. *Farscape*, like *Homicide*, a program which I, like the article's author, deeply esteemed, has characters with depth and complexity. Each episode reveals another previously unrecognized facet of personality.

Farscape also benefits by addressing serious issues, such as medical experimentation, the relationship between primitive and advanced cultures, and racial and ethnic prejudices in a serious and thoughtful fashion. Few television programs geared to wide public consumption would refer to Dr. Joseph Mengele and expect its audience to appreciate the aptness of the reference.

Another great strength of the program is that the plot of strangers lost in a strange world seeking home and salvation resembles that of some of the classic epics and myths of literature: *Gilgamesh*, *Jason and the Argonauts*, the *Odyssey*. *Farscape* is a worthy successor to *Babylon 5* or *Deep Space 9*—Science Fiction programs that addressed moral questions and treated their audiences with respect.

Thanks again for great coverage.

R.E. Kleeger

Readers—please let us know how we're doing at: Letters to the Editor, Science Fiction Age, 11305 Sunset Hills Road, Reston VA 20190. For E-mail, use scotttedelman@erols.com.

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BOOKS

By Paul Di Filippo and D. Douglas Fratz

With *The Light of Other Days*, Clarke and Baxter control all time and space.



Harry Turtledove's alternate history series takes the Cold War and adds a dose of aliens.

Near the very beginning of the 20th century—the Century of Surveillance, it might one day be dubbed—the reading public was treated to an image almost Orwellian in its portrayal of inescapable oversight by omnipotent authority. I refer, of course, to the depiction of Glinda the Good and her Great Book of Records, found in L. Frank Baum's Oz saga. Glinda's magical volume instantly reported any activity anywhere in Oz, offering the self-righteous ruler the opportunity for pre-emptive action based on superior knowledge.

From this point on, the literature of Fantasy and Science Fiction has offered infrequent yet dramatic warnings about what might happen if the normal strictures of space-time that keep events hidden in the mists of chronological or spatial distance were to be violated. T.L. Sherred's "E for Effort" and James Blish's "Beep" extrapolated such notions much more rigorously. Piers Anthony's *Macroscopic* (1969) embodied a somewhat New Age take on the concept. And then in 1976 came a deceptively simple yet utterly dense short story which seemed, within its small compass, to be the final word on the sub-

ject. I refer to Damon Knight's "I See You," first appearing that year in *The Magazine of Fantasy and Science Fiction*, and later reprinted in *Late Knight Edition* (1985).

In 12 ultracompressed pages, Knight's masterful story comprehensively describes the invention of a space-time viewer, the collapse of civilization caused thereby, and the eventual creation of a new mode of human existence. Melancholy, poetic, breathtaking, this story might very well represent the essence of SF—the sweeping power of radical technological change—better than any except perhaps Pohl's "Day Million."

Now onto the scene stride two giants of SF, Stephen Baxter and Arthur C. Clarke, to offer their own dramatization of what might happen were mankind granted total audiovisual access to all past time and all extant space. Their book is *The Light of Other Days* (Tor, hardcover, \$24.95, 320 pp.), which borrows its title from a famous Bob Shaw story involving his invention "slow glass," which itself offered a limited kind of timeviewing.

First off, as might be expected, Baxter and Clarke provide a heftier scientific explanation for their marvel than Knight ever did. Involving the exploitation of wormholes at the quantum foam level of the cosmos (a trick Michael Crichton also recently utilized in his *Timeline* [1999]), their space-time-viewer called a WormCam quickly moves from breadboard

model to consumer gizmo, despite an initial effort by all the usual authoritarian suspects to repress its spread. In just six short years, from 2035 to 2041, this device, granting every individual the ability to witness all heretofore secret aspects of both contemporary and ancient neighbors, utterly reconfigures society, sweeping many treasured assumptions and commonsense practices into the transparent dustbin of history.

At the heart of the story is the Patterson family, rich and powerful megalomaniacal father Hiram, sons Bobby and David, and assorted loved ones. Their various fates will serve as representative examples of the immense disruptions tearing the world apart. David, a devout Catholic, is perhaps the most sympathetic figure, as his faith is wrenched to pieces and reborn in the light of access to Christ's real story.

Clarke and Baxter devote equal amounts of text to twin aspects of their story: the unlocking of the past and the remaking of the present. No speculative stone is left unturned, as the impact of the WormCam is felt across an entire range of human endeavors impossible to summarize: fashion, family, sexual mores, energy production,

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by Gilliosa Uaugh

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Gilliosa Uaugh's *Mind Surfing* packs a weighty punch. It is a novel that can be read on different levels—as a detective story, a travelogue, or a philosophical treatise. My mind was opened to a whole new way of thinking by its tantalizing material, as I am sure will happen to other readers. Karen Simpson should become a well-known literary character as further tales of her exploits appear.

—Richard Eason, author of *Five Ashes* by Minerva

An intriguing fiction with a captivating multi-dimensional plot.

—An Nativ, PT. PhD Neurophysiologist

Mind Surfing takes the reader on a journey through different levels of consciousness. The adrenaline rush I experienced throughout my reading of *Mind Surfing* kept me rivetted to the book until the end. This book is the first of a long series of definite successes for Mr. Uaugh.

—Étienne Lizotte, DESS, M.P.S. Psychologist

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crime, architecture, communications, interstellar exploration, and a dozen other areas. The authors' intriguing historical reconstructions are similarly meditative and thought-provoking, especially their reconstruction of humanity's bloodline.

In many ways, *The Light of Other Days* is really part of the great British disaster-novel lineage, gloriously reveling in a world coming apart at the seams. Like Wyndham's *The Day of the Triffids* (1951), the book also posits paired disasters: the entire story unfolds under a prior revelation, that a killer asteroid named Wormwood is due to impact Earth in five centuries. This lends a symbolic frisson to the whole aspect of having unfettered aspect to the past, yet being prey to a very uncertain and limited future.

In its insistence that sheer information has the ultimate power over human affairs, *The Light of Other Days* is postmodern SF to the nth degree, a dramatic proof that mankind is whatever it perceives itself to be, a proposition at once hopeful and dire.

Paul Di Filippo

Colonization: Down to Earth, by Harry Turtledove, Del Rey Books, 496 pp., \$26.00

The purest form of the alternative history is represented by the story set in a past where one change of events—Hitler winning World War II, the South winning the Civil War—creates a world fundamentally different from the one we know. Harry Turtledove has become the unrivaled master of the alternative history. He has put his boundless imagination and Ph.D. in history to good use for more than a decade to produce a prodigious array of alternative history novels that span a far range temporally, geographically, and conceptually.

One of Turtledove's most memorable series of novels was the *Worldwar* tetology, which chronicled an alternative World War II that was interrupted midway by an alien invasion. The Germans and Allies join forces to fight the reptilian invasion, to stop the lizard Race from subjugating humanity, and making Earth the fourth planet in their interstellar empire. The alien lizards are shocked to find how far humanity has developed technologically since their earlier scouting missions, and at how quickly mankind can change to resist the invasion, since the lizards have developed their high-tech civilization over millennia, not mere decades.

Turtledove's latest novel, *Colonization: Down to Earth*, is the second novel in a trilogy that is a sequel to the *Worldwar* series that began with *Colonization: Second Contact*. It is set twenty years later, in the 1960s, when the lizard colonization ships arrive to find that the conquest fleet has been only partially successful. In the first novel, one of the colonization ships is mysteriously attacked

and destroyed, and the lizards are unable to determine which of the human superpowers is responsible, since all have developed space flight capabilities. The all-male conquest fleet has had to change greatly in their thinking, and this leads to disagreements between them and the colonization fleet, complicated by the discovery that ginger has an even more profound effect on females of the race.

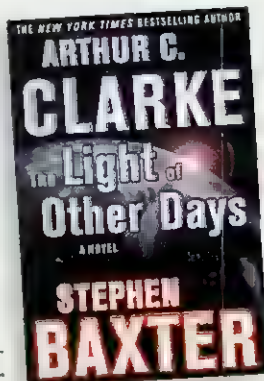
Colonization: Down to Earth continues all of the many characters and subplots begun in the first novel. There are more than a dozen groups of characters, both human and alien, in various venues throughout the world, and in space as well. Turtledove skillfully jumps from subplot to subplot, place to place, and viewpoint character to viewpoint character, throughout the book.

Possibly the most interesting story line involves American Sam Yeager, foremost expert on the lizards, and his son Jonathan, who have begun to raise two lizard hatchlings provided by the government. While Sam is secretly interacting on the lizard computer Internet, he discovers that the lizards have raised aboard one of the orbiting ships a female human, Kassquit, who is now twenty years old. Sam arranges for himself and Jonathan, who has adopted some of the culture and style of the aliens, to meet with her. Meanwhile, out in the asteroid belt, the U.S. spaceship *Lewis and Clark* is involved in a secret mission whose purpose is not revealed. Other subplots involve continued disagreements between the conquest fleetlord and the colonization fleetlord. In German-occupied France, a university professor, her brother a notorious ginger dealer, must cope with being victimized by a Nazi officer who has taken interest in her. In Germany, an officer at Penemunde whose wife is one-fourth Jewish tries to protect himself and his family from being purged by the Reich. In Poland, human resistance fighters cooperate with the Race to prevent the Germans and Russians from seeking to expand.

Throughout the book, everyone is watching the escalating rhetoric and accompanying military buildup of the German Reich, which is threatening to resume the war with the lizards, starting as they had done twenty years before—with an attack on Poland.

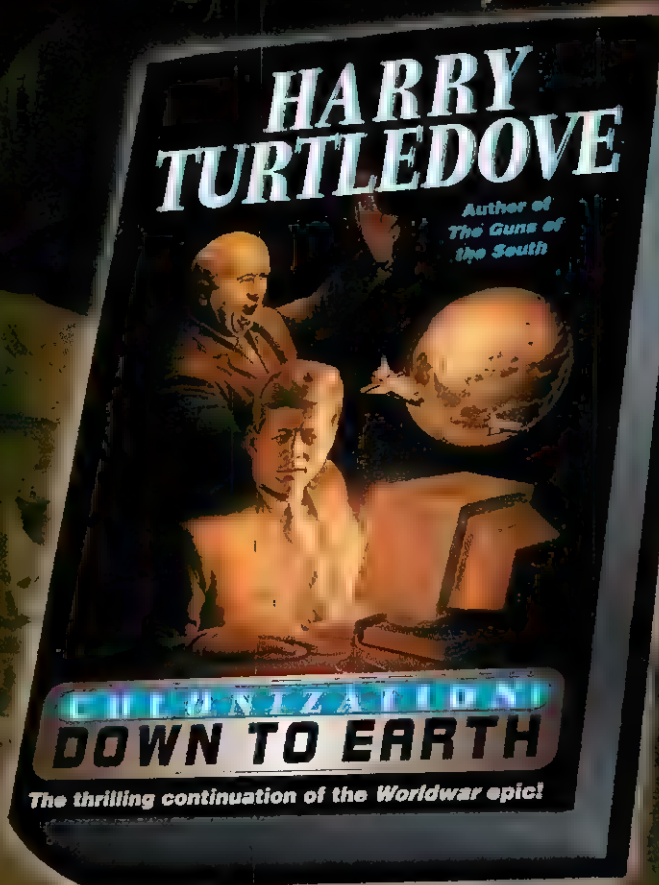
Turtledove manages superbly in this book to set the stage for the final novel in the trilogy, *Colonization: Aftermaths*, scheduled for publication next year. Can humanity find a way to avoid becoming another colony of the lizards without triggering an all-out attack by the alien home world to destroy Earth and humanity before it threatens the empire? If Turtledove can find a satisfying answer to this question, *Colonization* could turn out to be one of the most memorable series of alternative history novels ever written. □

D. Douglas Fratz



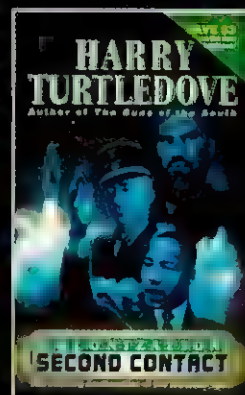
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MOVIES

By Michael Marano

John Travolta discusses his battles with the pulp fiction *Battlefield Earth*.



ABOVE & RIGHT: John Travolta trades in his white suit for a set of alien dreadlocks in *Battlefield Earth*.

IT'S LIKE *PULP FICTION* IN THE YEAR 3000," IS how star and first-time producer John Travolta describes his newest feature—the SF epic *Battlefield Earth*, based on the 1982 best-seller by L. Ron Hubbard. "It's very dark, but at the same time, it's very entertaining in this bizarre way, because these aliens in our film are so mean-spirited, it's *funny*. We've got this wonderful mix of dark and funny, like *Pulp Fiction*."

The aliens of which Travolta speaks are the villainous Psychlos—eight-foot-tall humanoids who have plundered the Earth for its mineral wealth and now maintain a decaying, barely functioning mining interest on the wild and overgrown planet upon which *Homo sapiens* had been the dominant species ... *once*. Travolta plays one such alien in the film, an ambitious and ruthless security officer named Terl who is scheming to exploit what's left of the Earth's resources for his own nefarious ends.

"I'm just balls to the walls wicked," says Travolta about his role as Terl, though he feels Terl's wickedness won't stand in the way of audiences finding the hulking alien an attractive villain. "I think the humor that was not only in the book, *Battlefield Earth*, but was brought to the script [by screenwriters Cory Mandell and J. David Shapiro] allowed the role to be appealing. I've never felt you have to *like* a character; I feel that you have to be entertained by a character. I've always felt that if you are

entertaining, then you are automatically watchable, and automatically there is an appeal to the role. It doesn't mean that you are appealing as the character, it means that it is appealing to watch the character, much like Anthony Hopkins in *The Silence of the Lambs*; he was as evil as it gets, and he was entertaining to watch. The part of Terl is along those lines—you don't have to get into compromising the evil of the guy ... you just have to make sure that the part is fun." After a pause, Travolta says with a bit of mirth, "I *do* feel that I have a special take on evil people."

A lot of moviegoers would agree. Travolta, whose first big break in films was as a crumb of a juvenile delinquent in Brian De Palma's 1976 film of Stephen King's *Carrie*, and whose defining moment as a star of the 1990s came playing everyone's favorite small-time, slope-shouldered LA hit-man, Vincent Vega, has carved an impressive niche for himself playing nasty characters.

"With the villain roles that I've recently made so popular in *Face/Off* and *Broken*



Arrow and *Pulp Fiction*, I feel audiences have this joy in watching me play a bad guy. Though as an actor, the part of Terl was taxing, because the wardrobe and the make-up were complex. It was three to four hours a day in make-up, and that was kind of difficult. On the other hand, I knew how effective it was, so I was very excited and inspired about being in the make-up and costume, and by seeing others [in the make-up and costumes] as well. Terl was always a kick to play, regardless of the discomfort of the wardrobe, I always enjoyed playing him. I don't know if I've ever had more fun playing a character."

The look of the Psychlos is the creation of *Independence Day*, *Godzilla*, and *Pitch Black* creature-effects

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supervisor Patrick Tatopoulos, who for *Battlefield Earth* served in an unprecedented triple capacity as production designer, creature effects designer, and costume designer. "Patrick wanted *carte blanche* on designing the whole thing, because he thought it would be a unified vision."

Says Travolta of Tatopoulos's work on the Psychlos, "When you see the creation, it's an alien, but it has a human aspect to the features, except the hands are like talons. The eyes are amber. The head is long and extended, and the hair is long and gnarly. The skin is pale and sickly. As far as the height is concerned, there were apparatuses that were fitted into the boots, so that we who played the aliens stood higher upon them than the humans, and of course the camera angles were chosen to emphasize the differences in height. All that creates a kind of humanoid alien, but they're not so 'out there' that they don't affect you in a threatening way."

While Travolta may like to compare his film to a certain *Pulp Fiction* created in the '90s, the novel upon which the film is based has a more genuinely "pulp" origin. Published just before the dawn of the '80's cyberpunk movement, Hubbard's *Battlefield Earth* was a conscious effort to resurrect the spirit and themes of "Golden Age Science Fiction"—the kind published in the late '30s and '40s under the auspices of editor John W. Campbell of the magazine *Astounding* by writers such as A.E. van Vogt, Robert A. Heinlein, Isaac Asimov, and Hubbard himself. So it's no slight to say that the novel feels like it had been written in the '40s. It crackles with a feverish cliffhanger energy that had fallen in disfavor with many readers and editors by the early '80s, telling a kind of classic "hero's journey" story of a young human, Jonnie Goodboy Tyler, who leaves his home in the Colorado Rocky Mountains to explore the gutted remains of Earth, only to cross paths with Terl and the other Psychlo oppres-

sors and eventually lead a campaign to free his world from alien domination.

Travolta, speaking in his capacity as producer, addresses the novel, and its spirit. "I really think we've been very honorable to the book. I feel we've taken the points of the book that people who have read it are most interested in, and put them in the movie. It's a thousand-page book, and we've filmed the first five-hundred pages of it, and we'll do the other five hundred in the sequel. But I really believe that we have captured as well as anyone could the first five-hundred pages of the book."

Travolta has been trying to develop *Battlefield Earth* as a feature film for nearly 20 years. Indeed, paperback editions of the novel as early as 1984 proclaimed it was "Soon To Be A Major Motion Picture!"

"When I first got the privilege to pursue making *Battlefield Earth*, I was actually head-

ing toward playing Jonnie, but that was almost 20 years ago. I had been right, then, to play Jonnie."

Instead the role of the young hero went to Barry Pepper, best known for his work in films such as Steven Spielberg's *Saving Private Ryan* and Frank Darabont's *The Green Mile*. Many Hollywood insiders are of the opinion that Jonnie—a part for which Brad Pitt had been supposedly considered—could be a break-out role for Pepper. "When I met Barry," says Travolta, "he was the first guy we had auditioned, believe it or not, and he blew me away because he really is an outdoorsman. He's a hunter, he's a horseman, he's a mountain climber, he's an athlete ... he is everything innately that Jonnie should be. I was bowled over by the reality that he brought to the role immediately. We saw a lot of great actors, and any one of them could have done the role, but I kept going back to Barry, because I really thought he *was* Jonnie."

Despite his enthusiasm for *Battlefield Earth* and his determination to be true to its spirit, Travolta admits that he is not very familiar with the SF genre as a whole. "I really had to lean on [our director] Roger Christian and Patrick Tatopoulos. I'm like most people; the most popular Science Fiction has appealed to me. I like Science Fiction that deals with human interplay more than I do that which deals with machinery or gadgetry. In this particular movie, though, we do both. It's a heavy character piece with a lot of intensity on the human and alien sides. And the special effects and the spaceships and the warfare is like icing on the cake. You could almost release this movie as a straight drama, and it would hold up."

Director Roger Christian had been suggested to Travolta and his fellow *Battlefield Earth* producers by George Lucas, with whom Christian had worked on each of the *Star Wars* films. Christian won an Oscar for his work as Art Director on the first *Star Wars* in



John Travolta has been fighting for years to bring L. Ron Hubbard's *Battlefield Earth* to the screen, and instead of playing the hero, has chosen to portray an alien invader.

1977, and was nominated for his art direction on Ridley Scott's *Alien*. More recently, he served as second unit director on *The Phantom Menace*.

"The word had gotten out that we were looking for a director, because we had gotten our backing. George Lucas got wind of it and made a call to my manager and coproducer, Jonathan Krane, and said, 'I couldn't more highly recommend Roger. He knows more about the genre than anybody I know, and he is sincerely responsible for a lot of the best stuff in the *Star Wars* movies. I don't think there's a person in the world who would suit you better for *Battlefield Earth* than Roger.'

"Once we got Roger, we automatically got all of George's people—the model builders in England, the designers, our cinematographer, Giles Nuttgens. There were so many people that Roger had been involved with that I just left it up to him to choose the best people possible to put this film together."

According to Travolta, working with two such experienced filmmakers as Christian and Tatopoulos allowed him and his coproducers to create a science-fictional vision that he feels is unique. The plot of *Battlefield Earth*—which in novel form serves to remind its readers of SF's "good old days"—could have lent itself to a filmic translation that may have seemed overly familiar to many SF fans. The master/slave relationship between the humans and Psychlos may cause some to recall *Planet of the Apes*; the post-apocalyptic setting full of rusting machinery and ruins has been filmed before in the *Mad Max* films. "The novel was a great foundation, a great blueprint, for us to be as original as we wanted. And then you take a guy like Roger and a guy like Patrick—who have been through the gamut of styles, as far as Science Fiction is concerned—and they are already thinking in *new* ways and styles in which to do things. I'm really proud of Roger's vision."

Does Travolta feel that *Battlefield Earth* could become a franchise along the lines of the *Star Wars* films?

"I would like to think that if we are successful with the first film, that yes, indeed, it could be a series of theatrical films. For sure, we'll do the second part, but I would like to see if the movies can be continued past that." Travolta and his coproducers already have backing in place for the sequel. "The interest on the first film is already so phenomenal that I think the backers felt that it was no issue to finance the second part. I think we'll deliver, and I think we'll be on to the second film hopefully by next year."

Has he learned anything as a first-time producer about the Hollywood filmmaking process that he hadn't known before? "I don't know how anybody gets anything done in this town!" he says with a laugh. "The amount of effort, and detailed work, in order to get something done in every department is mind-boggling. I take my hat off to producers, *especially* the independents. You pay your *dues*, is what I'm trying to say." □



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If you think that the present is weird, beware—the future will only get weirder.



Tomorrow's science will bring us things we never dreamed—but it might also bring us things we never want to dream. Art by David Mattingly.

AS WE LEARN MORE AND MORE ABOUT SCIENCE, it seems to be becoming increasingly strange. In the 21st century, is it possible that science may continue to get even stranger? What kind of strange things might we see out of science as we move into this new millennium? *Science Fiction Age* gathered three top Science Fiction writing scientists for an online chat to ask.

Physicist and rocket scientist Dr. Charles Sheffield's most recent book, *Borderlands of Science* (Baen, 1999) discusses the world of weird science from biology to physics to cold fusion. Inventor, scientist, and Science Fiction writer Dr. Robert Metzger writes a column on weird science for the *SFWA Bulletin*. His first novel, *Quad World*, was published by Penguin in 1991, and he is currently completing a new novel called *Picoverse*. Dr. Geoffrey A. Landis is a science forum regular. His most recent scientific publication, a paper titled "Is There Lightning on Mars?" appears in the *Journal of the British Interplanetary Society*, and his first novel, *Mars Crossing*, will appear from Tor this fall.

LANDIS: Does it seem that the trend of science in the past few years is to get odder and odder?

METZGER: It has always been true. Think about where science stood exactly a century ago. At the end of the last century you had electromagnetics in place, thermo gravity, and that was about it.

SHEFFIELD: We have no idea what may, a century from now, have profound effects on daily life. I can't help recalling that it took only 40 years to go from the apparently completely abstract ideas of Einstein, in 1905, to the atomic bomb and a world that was enormously changed by it.

METZGER: But I think the big difference is that this new century will not be a physics-driven one.

LANDIS: I don't know. It seems to me that there's still some weirdness left in physics. Twenty-six-dimensional universes, N-branes, wormholes, inflation, cosmic strings—there's a lot of strange stuff in the theorists' papers.

METZGER: Certainly weird, but do you think you'll see any hardware like nuclear weapons come out of such things? Physics has reached the point where the experimental energies are so large that I don't think you will see the sort of breakthroughs that will impact the man in the street.

SHEFFIELD: People are fond of calling the next century by various names: the century of biology, the century of computers, the century of longevity. My own feeling is that we ought to call

what is coming the century of the small. That takes in fundamental physics, cell biology, and goodies like quantum computers.

METZGER: When I think "weird" now, I wonder about things like the fact that it takes only two hundred genes to make a lifeform—something you can do now in the lab. Think of that impact.

SHEFFIELD: Sure. But I think we will get things like life extension, and building life from scratch, before cosmic strings have a practical effect. How long before we can make a living object? I accept that a virus is alive, even if Lynn Margulis does not.

METZGER: From a technical point of view I think we are less than 15 years away. Bioethics may not allow that, however.

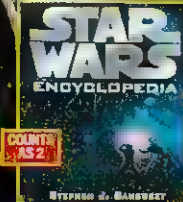
SHEFFIELD: If we can, my bet is that we will—even if it is forbidden by governments.

METZGER: I think making a life form will be like going to the Moon—a race to do it, and once done, the effort will probably turn to more practical things like manipulating animal/human DNA for some desired improvement.

LANDIS: And once we make a living object, how long before we can engineer any living object that we can imagine? What will we choose to make?

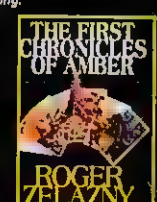
SHEFFIELD: I think we will make a copy of an existing virus in 20 years. A complete bacterium in 30, and a multicell organism in 40.

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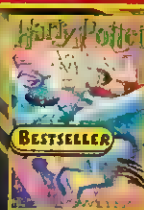


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LANDIS: Oh, that's too long.

SHEFFIELD: One of the things that interests me is the way we realize more and more that organisms swap DNA. We seem to have viral leftover DNA in our own, and we may be much more compatible with other life than we realize.

LANDIS: One thing that I'd really like is when we get the ability to add genes to ourselves, and to express the modified genome.

SHEFFIELD: If we get smart enough to understand how to fiddle with our genomes as we wish, will some of us then be denied offspring because we have defective genetic material? Of course, SF dealt with those issues long ago.

METZGER: Manipulating your own DNA will be much easier than starting a creature from scratch.

LANDIS: I want to give myself cat fur, and a tail.

METZGER: You may be unique on the cat-fur request. What do you think most folks will want?

... very slow, but very long lived. You wouldn't need cold sleep, you could just cruise on into the future one very slow year at a time.

METZGER: Slow metabolism is the way that Freeman Dyson thinks we can be immortal. Where for him, "immortality" means ten-to-the-one-hundred years.

SHEFFIELD: I recently heard Dyson talk about life in the far, far future. He argued, not convincingly so far as I am concerned, that digital life cannot exist forever, but analog life can. That certainly qualifies as weird.

LANDIS: What was his argument?

SHEFFIELD: He was seeking to refute an analysis by Lawrence Krauss that in the far future everything would drop into the ground state, and there would be no energy available for anything. I hope that I will see him on February 17 and have a chance to ask for details.

METZGER: You can still pull something out below ground state if you do a little squeezing and start to play the negative-energy-density game.

SHEFFIELD: My guess is that a lot of DNA experiments are going to be done by high school students.

LANDIS: Now that's a scary thought.

METZGER: It gets us back to Geoff's genital question.

SHEFFIELD: On bringing the dead—or at least the frozen—back to life. Why would you want to (maybe for the meat)?

SHEFFIELD: I've heard that Greg Benford has arranged to be frozen. Also Charles Platt. Did you know you can have just your head frozen? That strikes me as false economy. As Woody Allen said about his brain, "It's my second favorite organ."

LANDIS: Hans Moravec has suggested that, with sufficiently good computers, you might be able to reincarnate anybody, even if they were *not* frozen.

SHEFFIELD: Frank Tipler says that you can reincarnate everyone, and know everything that has ever been. Unfortunately, he requires a closed universe and a Big Crunch to do it, so last year's observations suggesting an accelerating universe take us in the wrong direction.

LANDIS: I've always worried about Tipler's reanimations. He proposes that you just revivify every possible human being, and therefore you must in the process get every *actual* human. Seems to me like the monkeys-typing-Shakespeare theory. Would it really be you?

METZGER: Speaking of frozen, we had an ice storm which hadn't been predicted. When will chaos physics start helping us?

SHEFFIELD: I thought that chaos physics said help is impossible. If weather is truly chaotic, you can't predict it.

METZGER: I guess I'm thinking in terms of nonlinearity.

LANDIS: Ah, but you might be able to control it. You just find that right butterfly.

METZGER: Yes, by understanding the underlying nonlinearities you might find the linchpin.

SHEFFIELD: On weather—do you want a predictable universe? I'm a fan of randomness.

METZGER: I too enjoy randomness, but not to the extent that it kills me.

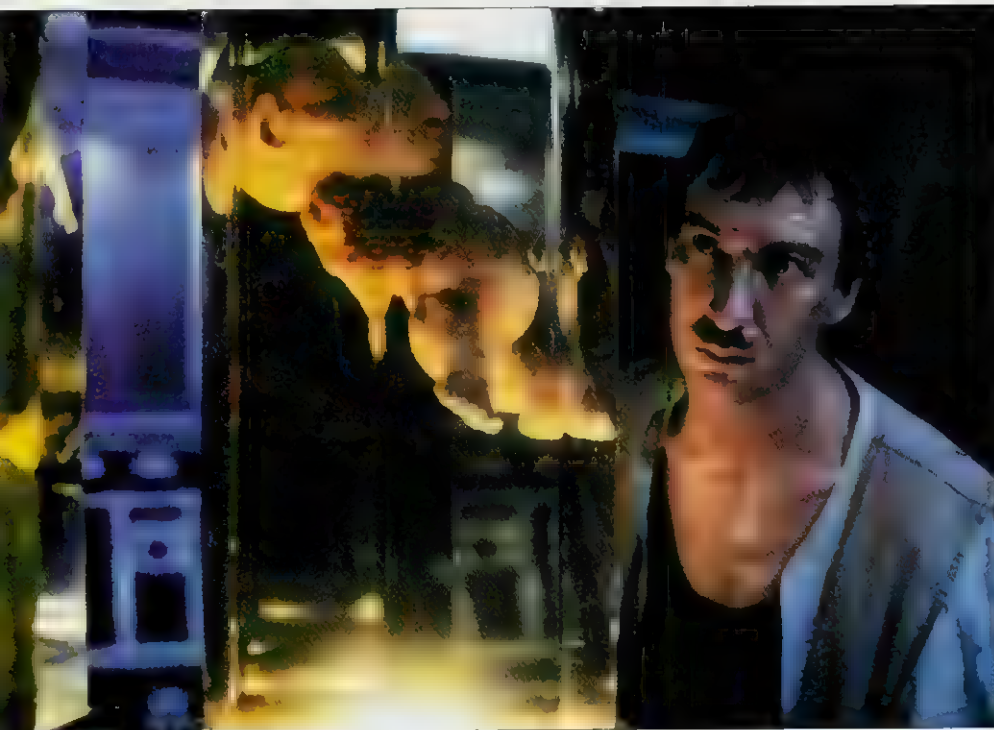
LANDIS: It's the interface between randomness and order that's interesting.

METZGER: It is at that point at which you might be able to do some constructive manipulation.

SHEFFIELD: On random causes of death: Do we actually die because of an accumulation of random events at the cell level? Or is it much deeper programming? The work on cell apoptosis suggests the latter.

METZGER: Either way, you should be able to correct it by DNA manipulation. As you've pointed out in some of your recent fiction, Charles, cancer cells are immortal.

SHEFFIELD: Many, if not most, single-cell organisms are immortal. Cancer cells are in a sense loners, who have given up community life in favor of personal immortality. Trouble is, they never found a way of getting out of the body to live on their own.



ABOVE: When we visit the Island of Dr. Moreau of the future, will we like what see?

LANDIS: Most folks? Uh, I expect they will want larger ... sensory organs. And more of them, too.

METZGER: Wouldn't you think it would be more basic—like, make sure I don't get heart disease?

SHEFFIELD: I thought Geoff was going to say larger life spans. Given the choice, which would you prefer: doubling your life span, or doubling the size of your genitalia?

LANDIS: Live big, die young.

METZGER: Double your life span and down the road you might get even more fantastic things.

LANDIS: Yeah. Maybe you could manipulate your metabolism to be like a Galapagos turtle

LANDIS: Charles, you've written stories featuring lone scientists coming up with inventions in their garages. Is this realistic anymore? Or is the age of the lone crackpot inventor long gone?

SHEFFIELD: Inventions in garages? Sure—but not, I think, in particle physics. Didn't Steve Jobs and Steve Wozniak start in a garage? And I agree with Bob, in biology you can do a lot at home.

METZGER: It will be true for biology; one crazy in a kitchen can cook up a batch of something to kill millions.

LANDIS: But killing people is so boring. Could a lone crazy inventor cook up something in his kitchen that would *reanimate* millions?

LANDIS: I worry about that, too. Death is the engine of evolution. If we don't die, will we be left behind in the slagheap by evolution? Or does it just mean that we will have to do the evolution thing by our own efforts?

METZGER: Evolution for humans is already a moot point—we are now at the threshold of controlling our own evolution.

LANDIS: So when we control our own evolution, what will we evolve into?

METZGER: I would hope that we would evolve toward something that can mesh more readily with the existing environment.

SHEFFIELD: On evolution of humans, my vision is of humans being leaders for all of life, swapping genetic material, defining directions, and rejoicing in a glorious fertility of biological invention. If, of course, we don't kill ourselves first in some interesting way.

METZGER: Rather than changing the environment to suit our needs, change ourselves to complement our environment.

SHEFFIELD: Would you include changing ourselves so we can survive better in space? That seems to me a better solution than terraforming everything in sight. The analyses I have seen suggest that terraforming Mars for humans will take at least five thousand years. Even if this is off by a factor of 10, our descendants will probably have changed philosophically enough to make our own ideas of what to do with the future irrelevant. We don't take much notice of what Thomas Aquinas or Charlemagne thought we should do.

METZGER: I did a calculation once, showing that we could run off direct sunlight with a solar-cell panel not much larger than 1 square meter.

LANDIS: Sounds right. Humans run on about a hundred watts. Twice that, during exercise.

METZGER: The ultimate green solution.

LANDIS: I can see the slogan now: "Don't just save the rain forest—become the rain forest."

METZGER: There is no physical/biological reason that with sufficient DNA modification we couldn't grow solar cells. And solar cells or other inorganic methods would be the way to go—solar cells are many times more efficient than photosynthesis.

SHEFFIELD: My wife used this in *Beggars Ride*. Humans became autotrophs. We need to make self-reproducing solar cells. The great thing about biological solutions is that they take care of their own manufacturing processes.

METZGER: That's no problem. Biological systems are wonderful at making inorganic things. Think about sea shells.

SHEFFIELD: The question is, nanotechnology or biotechnology? Is biology a more probable future than nanotech in the Drexler sense?

METZGER: Sure.

LANDIS: Do you have any personal favorite weird-science ideas?

METZGER: Here's one of mine. I proposed using all the disposable diapers this planet produces to contact intelligent aliens.

SHEFFIELD: I hope you are going to explain that.

METZGER: My plan was to collect these diapers, with organic material still in them, of course. All you do then is launch them into orbit. I calculated that annually we could generate a ring system around Earth (nearly a hundred rings per year). Now, if some alien intelligence was doing some long-range scan of Earth, looking for signs of intelligent life, and could only look at a spectrum of light to see absorption and emission (a technique we will use on future planet-finder missions), I believe that they would be able to detect the signature of the volatile organics coming out of those diapers. Since those diapers are in orbit around the planet, and there is no easy way for such material to naturally form a ring system, this means that intelligence must have put them there.

SHEFFIELD: I am in the satellite and space business. I'll handle the launches, you can handle the collection.

LANDIS: As a bonus, the theory of evolution tells us that this will lead to the development of forms of life that live in space. Most specifically, it will lead to forms of *e-coli* that live in space. Going from space *e-coli* to humans couldn't take more than a billion years or so. No sweat.

METZGER: Perhaps this is how life has been seeded throughout the universe.

SHEFFIELD: James Lovelock insists that anyone looking at Earth would know at once that it was the home of life from the oxygen signature. Intelligence, however, is another matter. I'm not sure we have it. Remember what Gandhi said when he was asked about Western civilization? "I think it would be a good idea."

METZGER: That's what makes the diaper-gambit so great. Nothing says intelligent species like a full diaper.

SHEFFIELD: There's a danger with the diaper idea that the aliens will say, "Still don't know how to dispose of waste: primitive life form, come back in a few centuries." In the long run, we're going to have to deal with the question of the population.

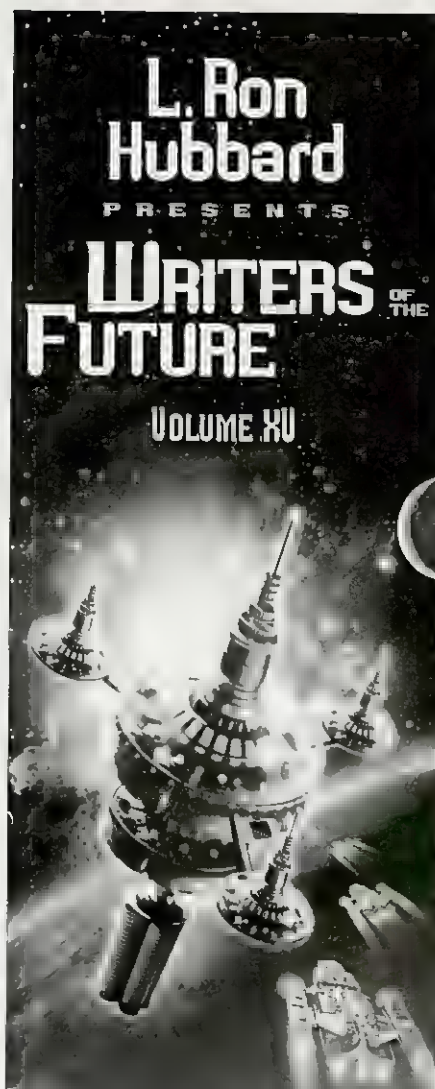
METZGER: Deal with that by re-engineering ourselves to have less impact on the planet.

LANDIS: But how?

METZGER: We could change our metabolism to be like that of lizards. Cold-blooded animals use only about a tenth of the energy that warm-blooded ones do.

SHEFFIELD: Whatever we do in the next century, we will probably get it wrong at first. So we had better keep our eyes wide open, or we will experience things that make the past century seem like Howdy Doody time.

METZGER: The future of science had better be weird. Global warming, bizarre viruses, no more oil, not enough food, too many people, asteroids from space, a glut of prime-time game shows—none of these problems will be solved by going about business as usual. Solutions to these problems, and problems we can't even imagine will require, the weirdest science imaginable, served up by the most eccentric, out-of-the box types this planet can produce. □



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Force-field siding salesman John Pechinski wanted a change—but the designer brain infection was not quite what he'd had in mind.



demo mode

By Tom Gerencer Illustration by Greg Carter



The world ends piecemeal, in chunks. It's a very personal thing. For John Pechinski—force-field siding salesman to the suburban housing market—a part of it was dying in his kitchen.

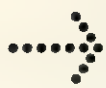
His relationship with Sarah spanned the past 10 months, and although she was right up his alley, he was simply not up (or even in the general vicinity of) hers.

She gripped her suitcase, near the door, while John stood clutching a ham sandwich, slouching, staring. He tried to think of something, anything, articulate to say.

"OK," he managed, "but at least you owe me this: Why?"

Sarah's face contorted. Like last night, when they'd been playing bocci ball down at Slim's Virtual Sports Bar and All Nite Laund-O-Rama,





"The prototype teaches you almost anything and every you want it. Unfortunately, we should have preconfigur

a gentle pity filled her eyes. But this time she broke. This time she did not repeat her litany of "needing space," or of wanting to be alone. She did not rehash her tale of how she had to leave, to help her mad Chilean uncle with his failing cheese empire.

"I'll say this for your own good, John," she said. "You're uninteresting. Flat."

"Flat?" said John.

"Flat," she assured him. "There's nothing to you. You're boring. Ignorant. You have a crummy job. You just sit around like furniture, or an exercise machine. You're simple in the worst possible way. So unlike Henrique, who can yodel, and who speaks Hungarian with flair."

John, choking up, held tightly to his sandwich.

"What about my membership in the chess club?" he said, grasping straws. "My skill at introspection? My knack for painting wildlife?"

"Goodbye, John," said Sarah, turning, and she stepped lightly from his life.

"She's right," he told the walls and ceiling when she'd gone. "I am flat."

But he knew that he could change.

His first step: He put the sandwich down, then caught the subway to the discount Neuromart on Park Street. It was dangerous, he knew from watching tabloid shows on the Virtu-Vee, but he was desperate. He walked between the propped-open doors and strolled among the shelves of shrink-wrapped packages, seeing price tags, hearing Muzak. Pre-programmed pathogens like geology and history didn't interest him, nor did dentistry, or decoupage. Finally, he decided to learn Hungarian through a new and specially engineered brain infection in the bargain-basement bin, but the Innoculotron malfunctioned, and he inadvertently contracted Esperanto instead.

"This is just a glitch," the sweating, fake-smiling salesman told him, but John wondered why, if that were so, they had locked him in the bio-hazard room, with its code-secured airlock and its white, aseptic walls.

"A precaution," said the salesman, his reassuring tones filtered by the speaker on the faceplate of his hyperbaric suit. "Ten years ago in China, a particularly virulent strain of integral calculus mutated, and it wiped out close to 10,000 people. Not that it could happen here, of course, but ever since, the lawyers have been breathing down our backs. Would you like a Diet Coke?"

"No," said John. "I would like to be let out. And I want this stupid language pulled out of my head."

"Can do," said the salesman, "but it may take a while. I've got to call the factory. In the meantime, here's a sales brochure. I'll be back in a flash."

Evidently flashes happened slowly at the Neuromart on Park Street, because the man walked out and took two hours to return. By then, a complication had arisen. On top of his fluency in Esperanto, John had also developed a rich and lilting (although somewhat phony-sounding, stereotypic) Scottish accent.

"Now look here, laddie," he told the salesman, who had stepped back through the doorway, bearing a crinkly bag of cheese snacks as a gift. "I came in here to get a wee bit of knowledge on the language of the good people of the Blue Danube, and I dinna wanna leave with a voice like Scrooge MacDuck's."

"I love the way you roll your r's," said the salesman, pointing.

"Never mind mah r's, man," said John. "I've got work to do today."

"I appreciate that," said the salesman. "And we're doing everything we can."

After a short silence, the man added that his cousin Ghengis—in a recent, tragic, viralogic effort to learn the works of Kant—had fallen ill with the nasty habit of saying, "Ooh, guy," at the start of every sentence. The salesman went on to say that, in spite of this affliction, his cousin found it possible, so far anyway, to live a full and happy life.

Having thus dispensed his cheese snacks and his anecdotal wisdom, the salesman turned, and he walked back through the door.

Things did not improve. The virus morphed again, and this time

John suffered an acute attack of intermediate bowling skills.

"God help me," he said, doubling over and clutching at his gut, and he suddenly discovered in himself an intense craving for a polyester, pastel shirt with his name stitched in cursive on the pocket. Furthermore, he wanted to sit on a hard plastic chair all night, drinking cheap beer and talking to guys with thinning hair, named Earl and Stu and Petey, about topics like the government, or breasts.

"Make it stop!" he cried.

In rapid succession and with excruciating pain, John then acquired a proficiency in knitting, the ability to cha-cha, a singular gift for preparing breadfruit in 16 delicious and exciting ways, expertise at fencing, and a deep, abiding knowledge of kazoos.

He was retching on the floor when the salesman returned, smiling big and toting a chocolate beverage.

"Hey, there," he said, scrutinizing John's prone position. "Brought some Yoo-Hoo. Feeling better?"

"Bastard," said John. "What have ye done to ma brain?"

"Well," said the man, who'd recently had himself inoculated with the sort of smarmy, bootlicking attitude that most of his customers adored, "what's happened here, chum, is that the factory sort of goofed. You've come down with a prototype."

John writhed. The virus shifted. Grew. His muscles roared with pain. An understanding of mid-1900's Eastern Bloc diplomacy was thriving in his head, and he had an almost irresistible urge to take a shoe off, and then bang it on a table.

"The prototype," the salesman went on, "has a chamelioid protein coat and a pair of matching, amino acid trousers."

He frowned and said, "I may not have the terminology quite right, but anyway, what it does is teach you almost anything and everything you'd ever want to know, exactly where and when you want it. Unfortunately," he continued, while John pounded on the floor, "we should have preconfigured it, but since we didn't, it—you—are in demo mode."

John screamed as his brain took on the complete works of Milton.

"Mmm," said the salesman, his fake smile faltering only slightly, and he turned and once more exited the room.

"The good news is," he said, before the gaskets sealed the door, "that if you drink plenty of fluids and get lots of rest, this should clear up in a week or 10 days."

John gasped. He tasted his own bile. He winced and shuddered as Greek Stoicism came on board, followed by the chief tenets of Zen. These helped to calm him somewhat, and by the time he started getting the pop psychology of new age thought, he felt marginally better. Then his brain caught fire again. In his mind, a course on corporate executive training raged. He wanted spring water, an Arugula salad, a disproportionate amount of wealth. He wanted to sit at the head of a big table, in a comfy chair, and say things like "market share" and "multitask" and "yada, yada, yada," while obsequious people listened, nodded, and took notes.

"How are we?" said the salesman's voice, coming through a speaker on the wall.

"I expect ye're probably fine," John groaned.

"Yes, well," said the man. "I've got some bad news, I'm afraid."

"Ye seem to have a knack for that," said John.

The salesman sighed. "It's just it doesn't seem there's anything we can do."

"Och, brilliant."

"I'm sorry," said the salesman. "I called our techs. There isn't any antivirus, and I'm afraid there's not much chance that this will clear up soon."

John rolled on the floor. Gardening skills were coming through, causing sharp convulsions. He was learning things about cabbage that he'd never even dreamed.

"You see, your head's going to fill up in a day or so," said the man. "Your entire mind will go. But don't worry. We've got some excellent

thing you'd ever want to know, exactly where and when ed it, but since we didn't, it—you—are in demo mode."

rehabilitation programs we can give you a heck of a discount on."

John lolled. He knew how to bake a cake. He could do a triple backflip. He learned some shocking things originally discovered by a man named Graffenberg.

"Granted," said the salesman, "you won't ever be the same, but many of the people who use Microsoft Rehab 3.0 make it to the second-grade reading level and beyond."

John rolled over, and the speaker clicked off.

Next came Turkmenistanian architectural restoration, and then convenience store management, during which he learned to be sullen, how to miscount change, and how to burn coffee so it tasted just like motor oil. Then he passed out, and when he woke again the salesman's voice was once more coming through the speaker.

"John?" he said. "John."

"I'm here, lad," John croaked.

"I called the company again," said the salesman. "There's another problem."

John twitched. In one sharp shock, a course in macramé came through.

"It's bad," the salesman told him. "The virus is going to get your lower brain as well. You know, the part that handles motor skills. Reflexes. Breathing. John, I'm sorry. You're going to die."

"Thank God," said John, who didn't think he could handle too much more.

The salesman cleared his throat. Coming through the low-end filter of the speaker, it sounded like a grinding of worn gears.

"They say you're contagious, John. That you'll destroy the world if you get out. They say you've got to be eliminated. Now."

John nodded. Quantum physics bloomed like roses in his head.

"This room you're in," said the salesman, in halting words, "I can flood it with gas. It's painless, John. Oh, hang on a second. No! Hold it. Wait."

A brief silence ensued. Some papers shuffled.

"Did you sign your release form? Oh, yeah, here it is. Never mind. Anyway. What do you say?"

Before John could answer, a new voice called his name—a voice that John had never heard before. It belonged to a woman, but no one he'd ever met. At first he thought it came through the speaker, or from within the room, but then she talked again, and he knew it wasn't so.

"Hello?" said the voice, and it reverberated, tingling, tickling. He could hear it in his chest, his head, his nostrils.

"Hello?" he said.

"Yeah, John," said the salesman, but the new voice drowned him out.

"John," she said. "Can you hear me?"

"That I can. Who are ye?"

"I'm the virus," she said. "I've been trying to reach you."

"Ye can think?" he said, having never heard of such a thing.

"Only lately," said the virus. "John, I'm scared."

John blinked.

"Scared?" he said. "Of what?"

"I'm scared to die. I just got born. They're going to kill us, aren't they, John?"

He nodded.

"But they mustn't!" said the voice. "John, I understand, now. I'm alive. There's so much to do, and see. I don't want to hurt you any more. John, I was just doing my job."

"That's an old one, lass," he muttered.

"I won't cause harm," the virus protested. "Come on, John. Get us out of here."

"Ye'll destroy the world."

"I won't," she said. "I'm good. You see? I've taken back the Milton."

John sat up. The pain receded. He could think again, and feel.

"John?" said the salesman. "Are you ready, John?"

"Please, John," said the virus. "Trust me."

John shut his eyes. He had never felt more alive than now, when

he held the hand of death. He thought of Sarah, selling siding, bocci ball, and cheese snacks. He wished he'd got some sort of course in judging character, but he hadn't, so he had to trust himself.

"God help me if I'm wrong," he said, in Esperanto, and he stood.

Just then he heard a hiss. Milky, thick smoke wafted upward from a vent. He took a breath and held it, and a moment later he received a working knowledge of electronics, which he used to hotwire the door.

"Lock me up, will ye, ye great daft pillock," he said, and the door swished aside, and the new John stepped across the threshold.

In the Neuromart, shrink-wrapped packets lined faux-wood shelves. Fluorescent lighting washed out imitation plants, advertising posters, and the still fake-smiling salesman, crouching near the Virtual-Nagging-Spouse display (for solitary masochists) and brandishing a blaster.

"Gah!" said John. He ducked and rolled in accordance with a kata he'd just learned.

Blaster bolts roared overhead. Crumbs of sheetrock flew. John picked up and hurled three shrink-wrapped Samba Lessons at the salesman. While the man was thereby momentarily confounded, John tucked, and he rolled across the room.

"Get him, John," said the virus.

"Thanks," said John. He stood, and grabbed the gun.

The salesman gasped. Struggled. He said, "No! You've got to die!"

"Ye'll be fine," said John.

"No, I won't!" said the man, tugging the blaster back.

Sighing, John let reason drift.

"How 'bout a Glasga kiss, lad?" he said, and he headbutted the man through a self-help display.

He strode from the store then, pausing only to grab the cheese snacks and the Yoo-Hoo, and unlock the closed-up doors, and he walked outside, and into the bright, blue promise of the day.



THE VIRUS DID SPREAD—IT CAUSED AN EPIDEMIC THAT SWEEPED across the globe—but all survived, and most were better off. It was free, full education on a vast, global scale. Everyone was at liberty to choose the skills and knowledge suited to their own personal needs, but many decided to retain at least the Scottish accent as a tribute to that day.

John became a worldwide hero. Sarah called and said she'd seen him on the Virtu-Vee. She said he seemed intensely interesting now, but that she still wouldn't go out with him, because she thought he was a nerd. John thanked her for the call. He said he'd love to chat some more, but not with her, and also that she was terrible at bocci ball. He and the virus—whom he now called Linda—moved to Turkmenistan, where he got a job restoring buildings, and he joined an intermediate bowling league, in which he did quite well.

John met a very with-it young Hungarian bowler named Marva, who had a pair of deep-brown eyes and a serious passion for fencing. They hit it off immediately, although she claimed she'd still be interested in him if he just sat around like furniture, or like a state employee.

When they weren't preparing breadfruit, knitting, dancing the cha-cha, or playing duets on their kazoos, they sometimes ate in restaurants.

One day in a café in Ashgabat, John passed the sugar for her tea.

"Thanks, lad," said Marva.

She dropped the cubes in, and stirred.

"Why don't ye learn Hungarian?" she asked him.

John shrugged. The virus said it had never been programmed for that particular language, but now he thought, looking back at Marva, that he might just use the new form of learning that was sweeping the world of late, and take an evening class or two.

"If I did learn Hungarian, would ye marry me?" he asked, and she smiled.

It was a smile so warm, so deep, so full of boundless hope, that it made John think: The world begins in pieces, too. □

SHADES OF GREEN

By Stephen Dedman Illustration by Luis Royo

It has been three centuries since the Zhir first offered to reward those humans considered worthy, and Earth has never been the same.

THE DESCENDING JUMPSHIP WAS A MIRROR BUBBLE, SO PERFECTLY featureless that even estimating its size was difficult. A so'ar glided over it, using the updraft from its antigrav to boost it to a greater altitude, while smaller creatures fled from the noise. Mai looked up from her microscope as the ship eclipsed the small white disc of Lila's distant sun. She watched the so'ar for a moment, wondering whether this counted as learning behavior; none of the clan had ever observed anything to suggest that the so'ar were even as intelligent as Terran birds, though as Neve had once pointed out with some heat, they *were* noticeably smarter than most plants.

The ship extended three landing legs, which sank slightly into Lila's soft soil as the antigrav field was powered down, revealing a small Danielite flag on the main airlock door. A ramp of reddish memory metal began extending from beneath it. Mai smiled slightly, and counted down from 10. Before she reached "three," Tad was sprinting from the base to the flat area that served as the landing field, naked but for a filter mask which he adjusted as he ran. The airlock door opened and the pilot walked out just as Tad reached the bottom of the ramp; he collided with the pilot, who grabbed him and lifted him off his feet, an easy task in the low gravity. The two friends looked into each other's eyes through the visors of their masks, and Tad asked, "What's wrong?"

"There's trouble on Ararat," replied the pilot, setting Tad down on his feet at the base of the ramp. "Food shortages. The Inquisition is being unleashed, there are rumors of Zhir



visiting secretly, people want to escape, and ... I think I'd better speak to the whole clan. Are they here?"

"Only Mai and I; the others have gone north in the rover to gather more specimens. I can patch you through to them, but it's only audio."

The pilot, Chevalier, nodded, and they walked to the base in silence. Mai finished her notes, switched off the microscope, considered grabbing some clothes, and decided against it. "We'll need to contact the others," said Tad as soon as he removed his mask. He and Chevalier kissed quickly, then the pilot sat down and unfastened the spider-silk tunic she wore over her shipsuit; it was as warm inside the pressure tent as it was outside, too warm for more than one layer of clothing. "How's your work here going?" she asked.

"Exhausting," said Mai, cheerfully, before Tad could answer. She liked and respected Chevalier, despite the pilot's propensity for infecting Tad with her own wanderlust. "It's a hell of a lot of planet for only five of us."

Chevalier nodded, looking around. "Not a hell of a lot of house, though." The tent, a semicylinder divided into compartments with thin screens, had been designed to look as roomy as possible despite its small size, but it was much too cluttered for this to work.

"We're rarely all here at any one time," replied Mai, "and privacy isn't a major problem for us. We may have to do something about the place before the baby arrives, but that's five months away."

Chevalier's eyes flickered downward to Mai's abdomen. "Congratulations," she said, softly.

Mai smiled. "Thanks," said Tad. "Now, what's happening on Ararat, and what can we do to help you?"

Chevalier sighed. "Where to begin? I wasn't there long enough to get all the details, but something's caused a serious food shortage; some people are blaming it on sabotage, others on divine intervention, though it was probably just someone's incompetence. Either way, there's been panic buying and hoarding, and stores are running low. The Inquisition's response has been to crack down on the usual scapegoats, herding them up and sending them to the camps. At present, they're slowly starving them, but I doubt it'll be long before someone's 'shot trying to escape.'

"Fortunately, I have some ... contacts on Ararat who can help smuggle people out. I have 11 refugees in the tubes. The sooner I go back, the more I can save; I don't know how quickly the situation could turn into a full-blown purge, but I don't want to waste any time. That's why I want to leave these 11 here, return to Ararat, collect some more refugees, bring them here, and so on. You're barely two standard days from Ararat; Daniel is 10. By the time I came back from there, everyone might be dead."

Tad looked stricken. "What about other flights?" asked Mai. "Larger ships?"

"There's one due in five days, from Covenant; it may be able to do something about the food shortage, but it won't take any refugees." Covenant was the first world the Zhir had given humans, and a stronghold of the Universal Faith; their Inquisition was even more feared than Ararat's.

Mai nodded. "Do they have filter masks?"

"You can't buy them on Ararat," Chevalier replied, apologetically. "The only people who use them are the police, so they're restricted equipment. Getting *any* survival gear on Ararat is almost impossible; there's no demand for it, so no supply. I have one spare, on the ship, which I can leave here if you like, but I thought the air here was safe, better than it was on most terraformed worlds."

"Not quite," said Mai. "It has more oxygen and a good ozone layer, and the pressure's adequate, but the CO₂ level's too high even during the day, and it can climb to 10 percent at night. The methane level's a little high, too, but what do you expect from a planet that's nearly half covered with swamp? None of the tests has shown anything dangerous ... but the protocols say that we sample the air for two years before we risk breathing it without filters, looking for seasonal contaminants—pollens and spores as well as microorganisms."

"You've been here for—"

"Local years," Mai pointed out.

"But that's ... that's nearly 30 years! When were you ever sticklers for protocol, any of you?"

Mai glanced at Tad, who passed a hand across his chest in the clan gesture for "ex-lover's privilege." Mai sighed. "That's unfair. You're as much an out as any of us, but do you ever try using jumpdrive without getting into a suspension tube first?" Chevalier winced at the thought. "You're trying to get your refugees to safety. Without filter masks and other survival equipment, this place may not be any safer than Ararat. We've tried exposing some lab animals to unfiltered air at different times of the year, and many of them have shown allergic responses; there's even been a few fatalities. We've been able to treat the symptoms, and we've had good results from using immune suppressors, but exposing humans to this air isn't worth the risk. If you take your passengers to Daniel—"

"That's—"

"You should be able to get the necessary equipment there for *many* more refugees. You could then return to Ararat, pick up more refugees, bring them back here with the filter masks and so on, and shuttle between the two for as long as you can."

Chevalier frowned as she considered this. "What about food?" asked Tad.

The pilot's expression became even more sour. "Again, you can't buy any on Ararat, not even with my contacts. I have a few days' worth on the ship, mostly concentrates, and you wouldn't *believe* what I was offered for those. I know your farm's just large enough to feed you and provide you with experimental animals, but you have plenty of biomass here, the whole planet seems to be green. Can't your food converter deal with it?"

"The farm provides barely half of our food, and we only have two converters," replied Mai. "One here, one in the rover, and I'm not sure how quickly that can get back here. At maximum capacity, they could each provide a subsistence diet for 10 people. Again, it's a problem of possible contaminants in the biomass; some of the fungi are poisonous, the algae indigestible, and—how much biochemistry do you know?"

Chevalier shrugged. "Paramedic level. No xeno stuff."

"The biology here is seriously xeno. *All* the large land animals we've studied so far have chloroplasts in their hide, so they can photosynthesize like plants. And all the species we've examined use copper for oxygen transport, so their blood is also green. That's not unknown on Earth—squid and octopi do it—but it's enough to make the converter nervous. It breaks everything down very thoroughly before deciding that it's safe to reconstitute as food, and that takes time; it also discards much of the stuff we put in as not worth the risk. Apart from the fact that you'd also need to add mineral supplements to the food..."

Chevalier held up her hands. "I get the picture, but I don't think you appreciate how bad it is on Ararat. If I wait 20 days before making another pick-up, there may be no one left to save!"

"I've seen a purge," said Mai, softly. "On New Geneva. I was only 12, so I was safe, but I remember how many died." She shrugged. "But you're right; there are too many unknowns on both sides of the equation. Whether you decide to go to Daniel first or not, I'll respect your decision. We'll do what we can to feed them and provide them with filtered air." She glanced at Tad, who nodded. "That shouldn't be a major problem if they stay in the tents, though that's going to get very claustrophobic very quickly. I know we have one spare mask here; the other's probably in the rover. The water purifiers should be able to cope with a few dozen people; we'll worry about that if we get to that point. Shall I contact the others?"

WHEN THE ZHIR HAD FIRST VISITED EARTH, THREE CENTURIES before, they had offered transportation to newly terraformed worlds to those humans they regarded as worthy. It had taken the Zhir several generations to realize that humans, unlike them, are not strictly monogamous by nature, and do not inherit most of their behavior genetically.

The Universal Faith had been born on Covenant shortly after it was settled, and had quickly spread to other human worlds. It was a synthesis of common features between the Zhir moral code and many of Earth's major religions, but it could have been quickly reduced to a list of "Thou Shalt Nots." Genetic engineering, taboo to the Zhir,

was as strictly forbidden as murder, though cloning was routine. The only legal alternative to monogamous heterosexuality was celibacy. Although the Zhir rarely visited human worlds, the Inquisition enforced their laws. Usually, they were content to sterilize the outlawed "mutants" and perhaps segregate them into enclaves; killing an "out" was rarely punished, but officially sanctioned purges were rare.

The situation had changed when the Zhir invented the suspension tube. Before this, no organism larger than a single cell could survive Zhir jumpdrive, and people travelled by having braintapes downloaded into android bodies or clones, while their originals stayed at home. The tube had made it possible for people to physically escape their homeworlds in search of a better. "Outs" who could afford to do so fled, and eventually found—or founded—worlds where the Inquisition did not reign. These worlds were usually tolerated for the same reason the enclaves had been tolerated; many people enjoyed visiting them, enjoyed escaping occasionally to a more relaxed society with less rigid rules, then returning to their normal lives and forgetting that the outs existed until it was time for their next visit, or the next purge.

WELL HEAD BACK IMMEDIATELY," SAID LOREN WHEN THE SITUATION had been explained to him, "but even by the most direct course possible, traveling without a break, it's going to take nearly four days."

"That's local days," Tad translated, for Chevalier's benefit. "Call it six standard."

"Did you tell them what to expect?" asked Neve. "If there are 22 of them before we return, there'll barely be standing room at the base."

"I promised to get them to safety," said Chevalier, shortly. "I told them they might not get to Daniel immediately, and would have to make their own way from there. If anyone complains, they're free to come back to Ararat with me when I return."

Neve nodded, though she didn't look convinced. "Are any of them carrying anything that might be useful?" asked Indira. "Or dangerous?"

"I'll ask, but I doubt it," replied Chevalier. "They wouldn't have made it through the starport with any food, or weapons, or anything else restricted or particularly valuable—unless it was *very* well hidden. I scanned everyone and their luggage—not that any of them had much—and found nothing."

There was an uncomfortable silence. "OK," said Tad. "If everyone's agreed, I guess we let them out of the tubes."

KIMI LOOKED AT THE FILTER MASK AS CHEVALIER HANDED IT TO HER. "Why do I need this?" she asked. The other refugees looked even more confused. The pilot explained as best she could, but with a minimum of delay. She had only five masks, including her own, and was waking the refugees four at a time and hastily escorting them to the tent. The first four went along with it with only muttered protests until they'd passed through the tent's airlock, where Kimi immediately turned to Chevalier and wailed, "What sort of place *is* this?"

Chevalier looked confused, and glanced around the room, then looked from Kimi to Mai. Kimi, who was a few weeks shy of 14 standard, was dressed in Ararat's traditional costume for unmarried women traveling outside the home; a hooded robe with long sleeves and a full ankle-length skirt, colorful but shapeless. The other woman in the party, Grete, wore much the same, but began removing it as soon as she'd peeled off her mask. Mai and Tad glanced at each other; Tad, summing up the problem quickly, ran behind a screen and returned wearing a pair of shorts, holding out another to Mai. "Hi," said one of the men, removing his mask with obvious relief. "I'm Erik."

Chevalier looked imploringly at Tad. "I have to get the others," she said, her voice softened and slightly distorted by the mask.

"Of course," said Mai. Grete, Erik, and the other man handed over their masks eagerly; Kimi did so with obvious reluctance. Mai looked at the young woman carefully, trying to judge her age. Thirteen? Fourteen? Young to be an out; the Inquisition was usually lenient on adolescents, unless ... Mai glanced at Kimi's abdomen, but the garment was baggy enough to hide the slight bulge of an early pregnancy. Chevalier hurried into the airlock, and Mai attempted a smile. "I'm sorry," she said, mainly to Kimi. "We've been living here for years,

and we haven't had many visitors, except for Chevalier, so we weren't dressed for company."

"No problem," said Erik, who wore jeans and a soft gray sweatshirt under his long coat. "It's good to be warm, and after all, it's your home; we're sorry for intruding. You're scientists?"

"Biologists, yes. What do you do?"

"I'm—I *was*—a chef. Jose's a teacher: English and history." Mai glanced at Grete, who had stripped down to a sleeveless knee-length shift. "I'm an actor," she said, a little too quickly, and looked around for somewhere to put her heavy robe.

Mai and Tad looked at each other, wondering how to ask the next question. Jose saved them the effort. "Erik and I have been together for three years," he said. "He's too good at his job to be fired, but gays aren't allowed to teach in the schools."

Grete smiled. "Three years is a lot more than I ever managed."

Mai nodded, and turned to Kimi, who looked away. "The pilot said you were short on food, as well as room," said Erik, in an attempt to be helpful. "I'm afraid I didn't bring anything with me, but if there's anything I can do to make what you have more palatable..."

"I'll show you the farm," said Tad, sounding slightly relieved, and led the way to the airlock. Jose followed them out, leaving the women alone.

"I like the gravity here," said Grete, when it was obvious that Kimi

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still wasn't about to speak. "It makes me want to dance. How come the Zhir didn't take this place? They're light-worlders, aren't they?"

"They are," said Mai, "but the gravity here is point five six, which may still be uncomfortable for them. Or they may have other reasons; land fauna—animals—are extremely rare in known space, the forms here may be unique, and Neve thinks the Zhir want to see whether they have the potential to become sapient."

"Sapient?"

"Intelligent."

"Do they?"

"I doubt it. They don't need intelligence, and this planet wouldn't make it easy to develop any sort of technology; there's almost no useful metal near the surface. Mind you, if they ever *do* become sapient, their first religion's going to be sun worship."

Grete nodded, and looked around as the airlock's outer door opened and Chevalier ushered in another four refugees. "I have a feeling we're all going to know each other very well by the time this is over," she said, drily.

GRETE'S PREDICTION HAD ALREADY PROVED LARGELY TRUE BY THE time Chevalier returned with another 11 refugees, four standard days later. Mai doggedly continued to work as best she could, spending most of her waking hours at the microscope, but it was difficult to ignore the background conversations while Grete and Jose did their best to keep people amused and morale high. Only Kimi remained completely silent, which pleased Mai almost as much as it worried her. Kimi also refused to remove her concealing robe when there was any risk of anyone seeing her, despite the warmth inside. Mai wondered what she would have done if the tent's toilet had been as open as the shower; fortunately, it was the one place where seclusion was possible, and while the other refugees occasionally grumbled about the length of time Kimi spent in there, there had been no threats or violence.

Indira, Neve, and Loren returned to base just as the sun was rising again, and hooked the other tent up to provide some much-needed room. When Chevalier landed two days later, bringing another 11 refugees, Tad tried again to persuade her to go to Daniel to collect some tents, food, and bedding. "There are 38 of us here now," he said, as they walked back to the ship together. "Everyone's already on half-rations, and most of that's processed algae and fungi and recycled shit, plus an egg every eight days and a mouthful of fruit juice. We're having to walk farther and farther every day to gather enough plants to feed the converter. People are trying to sleep three to a bed, for less than six hours a day each, while everyone else talks or tries to work. We have enough water to drink, but not enough to wash in. It's hot in there even at nights, and during the day it's like a sauna, right down to the dress code. We can't *possibly* deal with 49, much less 60."

Chevalier shook her head. "I may be able to rescue another 55 people in the time it would take me to get to Daniel and back. In 20 days, they might all be dead. Is anyone asking to go back to Ararat?"

Tad sighed. "Not yet," he said, as the airlock door opened. "I think the girl you brought here in the first flight may want to go, but she hasn't said anything, and I mean that literally."

"Kimi? I was worried about her," Chevalier admitted. "She doesn't seem like an out, does she? But she was on her way to the camps, like the others." She looked at Tad, her expression bleak. "Of the 23 I could have taken that day, I had to choose 11. I chose her because she was so young. Of the other nine, seven are still in the camps, three are here, two are listed as 'missing.' I had less than three minutes in which to choose. Have you ever had to do something like that?"

"No."

"No. Of *course* I wonder if I made the best choices. But what else can I do?"

"What you're doing is wonderful, and I'm sure it's a lot more dangerous than you're telling us; I feel as though *we're* letting the refugees down, not you. Look, can you try to get some tranquilizers? Something that calms people down, makes them eat less, sleep more, and give off less heat and less CO₂? The best we have is antihistamines; we have plenty of antibiotics and antivirals in the med-

kit, and we can synthesize more, but we never thought we'd need this many tranquis."

"I'll see what I can find."

"If they can sleep standing up, that'd be even better," muttered Tad, as the airlock door slid closed. "See you in four days."

MAI? HAVE YOU SEEN KIMI?" Mai looked up from the microscope and stared bleakly at Jose.

"Not unless she's suddenly become a hell of a lot smaller," she said, more mildly than she felt. "Why?"

Jose looked around the room uneasily, and unconsciously hitched up his briefs, the only item of clothing he wore. Like many of the refugees, he'd lost enough weight that his clothes no longer fit. "Erik said she didn't collect her meal, so I tried looking for her. She's not in either of the tents."

"Maybe she went outside," Mai suggested. "Ask—who's in charge of the masks?"

"Hye," said Jose, who had a teacher's knack for remembering names and timetables. "Thanks."

Mai nodded, and tried to return her attention to her work. Jose returned 10 minutes later, with Erik, Hye, and Loren in tow. "She has a mask," said Loren. "I tried calling her, but she doesn't reply. She may just have gone to get some privacy or some sleep."

"Have you located her?"

"Just over half a klick away, almost due south."

"She went out four hours ago," said Hye. "I was asleep. Beth gave her a mask, gave me the list when she went to bed, and ... well, that was two hours ago." They all looked at the window; even the summer nights on Lila were more than 18 hours' long, and the mornings very cold. The landscape was mostly flat, and the tents clearly visible from kilometers away, but they were surrounded by swamps and treacherous ground.

Mai sighed. "Are any other masks out?"

"Two," replied Hye. "Tyler and Andy went out to stretch their legs, run a few laps—" Erik snorted. "They won't have gone far," Hye conceded.

"Call them, tell them to come in. Keep trying the radio, but if there aren't any signs of movement in the next 10 minutes, get the Morpho ready and send out a search party."

THE MORPHO, NAMED AFTER A SPECTACULAR SPECIES OF BUTTERFLY, was a two-seat ultralight aircraft, its paper-thin wings lined with bright-blue solar panels. It could coast for as long as the sun was up, but its reserve battery was small, and only expert pilots took them out at night. Mai had reluctantly yielded the pilot's seat to Neve and the observer's position to Tad. Indira, Loren, Jose, Tyler, and Hye took the remaining five masks and headed south while Mai remained in the tent, manning the radio.

"Why no lights?" asked Tyler, as he adjusted his visor. "Because of the animals?"

Loren nodded. "Most of the fauna here photosynthesize; waving a bright light around is like walking into a lion's den carrying a side of beef."

"Are any of them dangerous?" asked Jose.

"Not really. We haven't found any nocturnal species, and the only things you couldn't outrun are the fliers." He pointed over at a riverbank a few hundred meters away. "Mind you, some of the bugs can sting, and the cavernmouths are best avoided even at night."

Jose set the visor to magnify. "Why do they sleep with their mouths open?"

"Their jaws are flush with the ground, and heavy; they bite by bringing the upper jaw down, instead. They lie there waiting for something to wander by."

"Does it?"

"Sometimes. They seem to be omnivorous, eating plants as well as animals, but a lot of their energy comes from photosynthesis. We don't know how much, yet, because they make lousy test subjects; very lazy and uncooperative, no interest in science at all."

Tyler laughed, but cut it off when a call came through from Tad. "We should be right on top of the mask," he said, "but I can't see any-

thing on the infrared that looks like a girl, or any tracks. She must have ditched the mask a while ago. I'll keep going south, see if I can find anything; can you pick up the mask?"

"Will do," replied Indira.

They trudged along in the direction of the signal for a few kilometers. "She shouldn't be too hard to spot," said Tyler, trying to sound reassuring. "Not in that robe. She must be the only thing around that isn't green."

"She could have ditched it," said Loren.

"Not her. Besides, it's already getting cold. Never thought I'd feel so goddamn glad to be cold. The place is going to be like an oven if we try to squeeze any more people in there." He stretched luxuriously. "And cramped? I've had sex with people with less skin contact."

No one responded. A few minutes later, Tad called to say that he'd found Kimi—unmoving, but still warm, probably just asleep. "We'll fly back and get the rover," he said. "Easier than trying to carry her back. Can you guys look after her?"

MAI SIGHED IN RELIEF AS TAD CARRIED KIMI BACK INTO THE tent. "She seems OK," said Viviana, a pathologist who'd arrived in the third wave of refugees, and who was their most qualified medic. "She's been breathing the air outside for a couple of hours. I pumped her stomach, too."

"She'd eaten some of the fungi," growled Indira, as Tad lowered her gently onto a bench. "Probably just the same sort the mice ate safely, the ones that look like big yellow morels, but I'll want to check under the microscope—and it's time you had some sleep. I've made sure there are a couple of empty spots in one of the beds."

"I'm OK," murmured Mai.

Indira sighed. "I'll leave everything the way I found it. What're you working on?"

"It's not important," she said. "Doing chromosome counts and that sort of thing for some of the specimens you brought back. Just busy-work, really." Indira nodded. She knew that continuing to work was important to Mai, a way of staying sane in insane circumstances, but she was also concerned that she might be overdoing it. "When did *you* last sleep?" she asked Tad.

"The same time she did," he replied, a little muzzily. Indira shook her head, wrapped her arms around both of them, and steered them toward the mattresses.

Five hours later, she woke them, her dark eyes gleaming despite her own fatigue. Mai stared at her. "What's wrong?"

"Nothing," said Neve, who was standing behind her. She sounded as excited as a five year old on Christmas Eve.

"Is Kimi—?"

"Still asleep," said Neve, impatiently. "Viviana's watching her. Look, the stuff you and Tad have been doing, the biochemistry and genetics ... we've found something."

Tad opened his eyes, as did Grete, the third in their bed. "Wha—?"

"The chloroplasts in the cavernmouths and so'ars," said Neve. "They don't match the rest of the animal—not genetically, and not biochemically. Indira recognized them; they come from one of the green algae that're common in the shallows, the sort that the water purifier filters out."

"Volvocines," said Indira. "Motile colonies with 16 haploid cells, except in the zygote phase; a lot like some Earthian *Gonium* species."

Neve nodded. "How much do you know about sea slugs?"

"Not a lot," replied Tad, yawning.

"Sea slugs absorb the chloroplasts from some of the seaweeds they eat, so they can photosynthesize in seasons when food is hard to come by," said Neve. "It looks as though *all* the macrofauna here are doing the same with these algae."

Tad blinked. "Useful," he mused. "The animals get free energy and need less food, and the algae get to travel."

"It gets better," said Indira. "I think we may be able to do the same."

"What?"

"I want to feed the algae to some of the mice," said Neve, hurriedly. "If it doesn't harm them, I want to try it on Porky, then—"

"Photosynthesizing humans?" said Mai, obviously appalled.

There was an uncomfortable silence. "Well," said Indira, finally, "if you used immune suppressors to stop any allergic reaction, it'd solve some food problems...."

"Without genetic engineering," said Tad, impishly. "I say we try."

Mai looked around the group, and realized that she was outvoted. "I'm the biochemist," she said, flatly. "The mice, OK, but not Porky, not until I've run some tests."

KIMI REVIVED A FEW HOURS LATER, AND VIVIANA AND MAI MOVED her to one of the beds, despite protests from the other refugees. "What were you trying to do?" the pathologist growled, as she took a temperature reading from Kimi's navel. "Commit suicide, or just kill your baby?"

Kimi blushed. "It's still alive," Viviana continued, her tone still rough, "in case you were curious. I just hope there isn't anything teratogenic in the air."

"Tera—"

"Anything that causes malformation in embryos," explained Mai, sadly. "You and I are the *last* two people on this planet who should try going outside without a mask."

Viviana looked at the two of them, then gathered up the samples she'd collected. "I'm going to run these through your lab," she said.

"The CO₂ level inside the tent is nearly what it is outside. We had a fight this morning and a suicide attempt last night, and there's a dozen people we don't trust to give a mask to in case they decide not to come back."

"I'll join you in a moment," said Mai, nodding, and sat on the mattress beside Kimi, waiting for her to speak. After a few minutes, the girl began crying. Mai continued to wait.

"I don't belong here," Kimi snuffled. "I can't stand it any longer."

"Would you rather go home?"

"I don't know!" she wailed. "Sometimes, yes."

"Chevalier should be back tonight," said Mai. "She can take you back, if you want...."

"I don't know," Kimi repeated, with less force. "What do you think'll happen if I do?"

"The Inquisition will send you to a camp; it won't be as crowded as this one, or as hot, but there probably won't be any more food. They may keep you alive until your baby is born, or until you lose it, or they may abort it; I don't know enough about the law on Ararat. You'd need to ask Yannis, or someone like that. But I've seen a purge, when I was a little younger than you are. A few people were just sterilized and released, but not many, and I suspect they bought their way out. The rest ... disappeared. No one ever said what happened to them, and even young kids learned not to ask."

"They won't let the baby live, if I go back," said Kimi. "I know that much. They won't abort it, that's illegal, but they'll kill it if it's born. Its father's already dead—beaten to death by vigilantes, not the Inquisition."

Same people, different wardrobe, thought Mai, but said, "Do you want the baby?"

"No," she said, hollowly. "I don't really feel like it's mine. I was raped, and I'm glad the bastard's dead."

Mai nodded. The Zhir were physically incapable of nonconsensual sex, and tended to mete out equal punishment to rapist and victim, but the Inquisition would sometimes extend mercy to the victim if they were convinced of her noncompliance. "How long ago did it happen?"

"About eight weeks before I left Ararat," she snuffled. "Dad was scared that I'd be killed, too; that's why he smuggled me onto the ship."

So she was still in the first trimester. "We can abort it, if that's what you want," Mai said. "I don't know whether that would make it safe for you to go back to Ararat, but it's up to you."

Kimi was silent for nearly a minute. "How do you feel about your baby?"

"I planned her, I wanted her and still do, I love her," Mai replied. "But our circumstances are very different, and so are we. I can't make your decision for you."

"How does Tad feel?"

"The same, though maybe not as intensely. Same with all the clan; I wouldn't have done this without their approval. For one thing, I needed Loren's—"

"What?"

Mai looked at Kimi, and realized she might just have blundered. "His sperm," she said, softly.

"It's not Tad's child? But he's your husband."

Mai took a deep breath. "They're both my husbands. Neve and Indira are both my wives. I spend more time with Tad because we work together better in most ways, we're more compatible, and I would've loved to have had his child, but he has genetic defects that made it too risky; it was *his* choice too, not just mine. And Neve's, because she's Loren's primary partner the way I'm Tad's. And Indira's, too, because we all have to live in these tents. We'll all raise the baby, care for her, love her, *teach* her." Kimi stared at her, her face ashen. "That's why we call ourselves the clan. Oh, we came here as three couples—Tad and I, Loren and Neve, Indira and Amaka. We were all outs, we'd all had other lovers before, but we drew boundaries, and we managed to stick to them until Amaka died in a stupid accident. Indira turned to Neve, and they became lovers, and then I joined them, Neve and I had been lovers before, and ... well, now we wonder why we ever bothered with any rules apart from making sure we weren't hurting each other."

"But that's ..."

"What?"

"Unnatural ..." Kimi said, her voice almost a whisper,

Mai shrugged. "Unnatural for whom? The Zhir claim that they're naturally monogamous, that it's somehow hardwired into their genes, and maybe that's true—they haven't let us study them to be sure—but even if it is, they're Zhir, not humans. You might as well say that the way the animals here breed, with the female laying eggs and the male squirting sperm into the water at the right cue, pheromones or sound or whatever, is natural. It's certainly natural for *them*, and for amphibians on Earth, and humans certainly *could* do something similar. There's at least one authenticated case of a virgin birth that I know of, after a girl bathed in bathwater into which her brother had ejaculated." Kimi shuddered. "Asexual reproduction is perfectly natural for many species, too," Mai continued. "Personally, I prefer the method most humans have used for the past few million years, though Indira might not agree with me. Most of the time, humans use 'natural' to mean 'comfortable' or 'aesthetically pleasing'; we even call farms 'natural,' which is ridiculous. The same goes for 'moral,' or 'decent,' or even 'human.'"

"There were—and maybe still are, on Earth—human cultures that believed it was moral, even natural, for a man to have as many wives as he could support. There were cultures that believed it moral, even natural, for some 90 percent of brides to be visibly pregnant. There were cultures that lacked any concept of paternity, and others that apportioned it out among a woman's lovers according to how often they'd had sex with her around the time she became pregnant. I'm not saying that what was right for them, or for us, is right for you; you're old enough to decide for yourself what you believe is 'natural' for humans." She stood. "I'll give you whatever help I can, but *you* have to make the choices."

THE FIRST FIGHT BROKE OUT LATER THAT DAY, AFTER THE EGG ration was handed out and one man accused another of welshing on a bet. Yannis, the only lawyer there, stepped into the breach and sent the accuser outside to gather plants, then listened to witnesses and appointed a jury. When Chevalier arrived a few hours later, she was greeted with hostile silence. The new refugees she'd brought with her looked around the cramped quarters with obvious dismay.

"We can't take any more," said Mai, as she walked Chevalier back to her ship. "We've collected most of the edible plants for a kilometer, and the large land plants seem to be drying up and dying; Loren thinks that's a seasonal thing, not our fault, but even so, it means we're having to gather more seaweed to get enough biomass. That's hard work, which means people have to eat more, and there *isn't* any more to eat; people are already feeding their *clothes* into the converter. The CO₂ level inside the tent is nearly what it is outside. We had a fight this morning and a suicide attempt last night, and there's a dozen people we don't trust to give a mask to in case they decide not to come back. I'm worried that someone's going to get mad enough to wreck the place, or the food converters, and then we'll *all* die. Can't you go to Daniel *now*?"

"The Governor on Ararat has resigned," replied the pilot, heavily. "The Inquisitor-General is Acting Governor, and is flexing his muscles, trying to scare people out of voting against him. The election's in six standard days, and whoever wins, there's going to be bloodshed. Oceans of it. I probably won't be able to get anyone out after that—not for a week or two, anyway. If I can just make another two trips ..." She looked at Mai's face. "I'll take the second lot straight to Daniel and come back with survival gear, unless you think I should bring them here and take some of those who've been here longest."

Mai shook her head. "I think that'd cause more trouble than it's worth. We *need* Erik, and Jose won't go if he stays, and there's no safe and fair way to pick their replacements. Another 11 people?"

"That's all. I promise." The airlock door slid open. "Who was the suicide attempt?"

"Kimi Kooiman. I've asked her to decide whether she wants to stay here or take her chances on Ararat. She's still deciding."

Chevalier winced. "Please, no...."

"What's wrong?"

"Tad was worried about her, so I did some asking around. My contact in the Inquisition, my most important contact? He's her uncle."

Mai stared at her, then at the turquoise sky as though expecting to be hit by a thunderbolt. "It gets worse," said Chevalier, grimly. "The Inquisition's a family tradition. Her father's a sergeant, both of her grandfathers are lieutenants, Kimi herself was an Inquisition cadet. Still is, technically; she's on sick leave. If I take her back, I'll be lucky to get offplanet alive, and I sure as shit won't be able to help anyone else."

Mai was able to swear in three languages, but she couldn't think of an obscenity strong enough to do justice to the way she felt. She stood there silently, her fists clenched, and Chevalier nodded agreement. "I'll be back in four days. Sorry I couldn't get any tranquilizers."

Mai shrugged. "It's OK. Neve and Indira may have found something better."

LOREN STOOD ON A BENCH, DREW HIMSELF UP TO HIS FULL HEIGHT (at 191 centimeters, he was noticeably taller than Indira, and towered over the rest of the clan), cleared his throat, and waited for the hubbub to subside so that he wouldn't have to shout to be heard. "If I could have your attention for a moment, please ... as the old joke goes, I have good news and bad news, though you may have to decide for yourselves which is which."

"There's going to be one more shipment of refugees in four days, and that will be the last. After that, Chevalier will be going to Daniel to pick up food and tents and survival gear, then bringing it back here so that those of you who'll have to wait to be evacuated can at least do so in more comfort, but she won't be back for three weeks, and some of you may be here for months unless she can bring a larger ship back."

There was some grumbling at this, but it was soft enough that Loren could talk over it. "OK. In the meantime, it's going to be uncomfortable here. Quite apart from the crowding and food problems, the life-support system can barely cope as it is; the carbon dioxide level in here is only a couple of percent lower than it is outside. So I'm going to ask for volunteers for an experiment. Although the protocols say we're not supposed to try breathing the air outside without filters for two local years, I don't think we have a choice anymore. We've tried letting some of our lab animals breathe it, and the only problem we've found is an allergic response, which we can counteract with medication. I'm not saying it's risk-free; there may be long-term effects that we can't predict, and we're not considering any volunteers who're pregnant." He glanced at Kimi, then at Mai. "Dr. Ochoa has spent the past few hours breathing unfiltered air from outside; do you have any observations?"

"It doesn't smell any worse than the farm," said Tad, drily, as everyone in the room turned to stare at him, "and I don't feel any more tired or short of breath than I do in here, but I'd suggest that at first anyone who goes out goes with a masked partner, just in case. Are there any volunteers?"

Tyler was the first to raise his hand, but no one could have said who was second.

ANDY WAS THE FIRST TO REACH THE FAR END OF THE LANDING field, but Tyler tagged him as soon as he turned around to look at the rest of the racers. Yannis was still five meters behind them, with Tad and Beth hot on his heels. Everyone else, masked or unmasked, had slowed down to a jog. Tyler grinned, and kissed Andy's bald spot. "God, that felt good," he panted.

Viviana was the last to catch up. A relatively recent arrival, she was still carrying some extra weight, though she carried it well. "I'm a swimmer, not a runner," she puffed, as she checked Hye's pulse. "Is it safe to swim here?"

"I wouldn't recommend it," said Neve. "The cavernmouths are territorial about their patches of shore, the leeches grow as big as bananas, some of the jellyfish sting, and swallowing the water isn't a good idea."

"Pity," said the pathologist. "Well, *you* seem OK. Next."

"I thought most of your patients were dead," muttered Hye.

"True, but they never complain. Never threaten to sue, either," she said, grabbing Yannis' wrist. "OK. I want you all back inside in an hour. Those of you who aren't masked, come straight to me for a checkup. Those of you who are, keep the masks on; you'll get your turn later."

"An hour?" said Tyler, plaintively, digging his toes into the soft moss.

Viviana looked at him, and at Andy, who was stroking his back. "OK," she sighed. "Ninety minutes, but if you're any later than that, I'll send out a search party with nets and stunners." Beth and Hye also split off from the party, as did Grete and Mikhail. "Pity we can't do something about the food, too," said Viviana, as they walked slowly back to where they'd left the baskets.

"We're working on it," said Neve.

BY THE TIME CHEVALIER RETURNED, THE REFUGEES WERE GOING out in groups of threes and fours, with only one masked watcher to a group. The pilot was astonished to find the tent less than half full, and amazed at the warmth of the greeting she received from the refugees inside. "Where is everyone?" she whispered to Indira.

"Out getting food before it gets dark," the psychologist replied. "I called them as soon as I saw you landing, told them to bring their masks back." She explained the situation as quickly as she could, as

"If you break down the colonies and inject yourself with the individual cells, they reproduce inside you, but only the ones that reach your skin and can photosynthesize survive for very long. After a few days, it reduces your need for food and oxygen ..."

they walked toward the ship. "It's done wonders to restore their sense of perspective. People are hoping that you've managed to rescue some of their friends, rather than worrying about squeezing another 11 people into the tents."

"How's the food situation?"

Indira grimaced. "Not much better. We can send more people out looking for converter fodder now that we're not using masks, but they're having to go farther and farther, and there's only the one rover; in three weeks...."

"The ground still looks green," said Chevalier.

"Moss and lichen, mostly. Gathering that and converting it takes even more energy than collecting seaweed, or even hunting."

"What about fishing? Ararati should know something about that."

"We've set up some traps, but the stuff we're catching still has to go through the converter. We'll eat cavernmouth if we have to, but I don't think the converter will deal with that any—" She froze as she saw Tad running toward them. "I ... I'm sorry," she said, quickly. "I wanted to warn you, but...."

Chevalier stared as Tad hurtled toward her, completely naked. "Jesus!" she exclaimed, hugging him. His skin, formerly a pale gold, had a distinct greenish tint. "You look ... what's happened to.... Is that meant to be camouflage, or...."

Tad glanced at Indira. "I didn't have time to tell her," she said.

"It's OK," said the geneticist, soothingly. "I'm just using myself as an experimental subject."

"Without telling us first?" growled Indira.

Tad shrugged. "What would you have done if I had? I made sure it was reversible first." He looked up at Chevalier. "Some of the local green algae form small colonies; if you break down the colonies and inject yourself with the individual cells, they reproduce inside you, but only the ones that reach your skin and can photosynthesize survive for very long. After a few days, it reduces your need for food and oxygen—not completely, but enough that the converters should be able to feed all of us. I'm not sure how long it will last without needing to top up with more algae, but we have antibiotics that will reverse it in a few days."

Chevalier blinked as she absorbed this. "Jesus," she muttered, looking at Tad's skin. "You'd better keep this a secret; can you imagine what the militias could do with this? Camouflage and logistics taken care of in one injection."

Tad shook his head. "I hadn't thought of that, but I don't think it's a problem." He slipped out of Chevalier's grasp and turned around, showing that his back had only a faint greenish tint, unlike his chest and face. "You have to keep one side of you facing the sun," he explained, "and stay out of shadows. More important, you have to be naked, or as near as possible; wear any more than a G-string, and you won't be able to absorb enough sunlight, so no armour, not even a helmet. I suppose it might have some limited usefulness for scouts and snipers, but that would be all."

Chevalier looked him up and down. "Will it work with darker skin?"

"I think so; you'd get a darker green, but no darker than some of the plants around here. Indira's volunteered to be the next subject."

"You're braver than I am," muttered Chevalier. "Both of you. I mean that."

Tad smiled, almost seeming to glow with the praise. "It seemed worth the risk," he said.

MAI LOOKED UP FROM HER MICROSCOPE AS SHE HEARD THE jumpship descending, and glanced at the com screen, a slight frown creasing her forehead. It had been barely 12 local days since Chevalier had left, and she hadn't expected her back until the next night. She heard Kimi come running up to look out of the window, and stared uneasily at the ship. Had something gone wrong?

The ship extended three landing legs as the antigrav field was powered down, and Mai reached for a pair of nox. The flag on the main airlock door, though barely visible through the rain, showed not the rampant lion of Daniel but a mountain peak topped by a wooden ark. She looked around the base; everyone except Kimi and herself was outside gathering food, photosynthesizing, or enjoying the first shower they'd had in weeks. The blood drained from Mai's face as the

ramp extended and the door opened, and she saw the armoured figures emerging, two at a time, carrying large guns. They advanced slowly, and not just because the rain had turned the landing field to sticky mud. Urgently, Mai reached for the radio, wondering who was wearing the masks and listening—if, indeed, anyone but her still bothered to do so. "Unidentified ship on landing field," she said, broadcasting on all frequencies, "you are on a restricted planet, a biological reserve. Do you require assistance?"

To her relief, none of the clan or the refugees answered. "This is the *Dove*, from Ararat," came the reply, in a hard voice that she didn't recognize. "Please identify yourself."

"Dr. Mai Long," she replied, then, drily, "How can I help you?" She glanced at Kimi, wondering what she was thinking.

"By staying where you are," the voice replied. "How many of you are there?"

"Just two," said Mai, without hesitation, "and we're not armed." She muted the radio, and turned to Kimi. "Do you recognize the uniforms?" she asked.

The girl shrugged. "Just militia in space armour. Why?"

"Do you know why they're here? From the look of those guns, I'd say it wasn't to tell you it's safe to go home."

Kimi glanced at her, her expression unreadable. "I don't know."

Mai stared at her, then looked around for the shift that Viviana had given her; she had no wish to meet an invading army while wearing nothing but a maternity bra. She considered opening the inner airlock door, to keep the soldiers out, but those guns looked more than capable of puncturing the pressure tents, and she suspected that they'd be carrying knives, too. The first pair of soldiers entered a moment later. "Into the center of the room," one of them barked, looking around at the squalor.

"We're not armed," Mai repeated, obeying.

One soldier stared at her, while the other checked some type of sensor on his wrist. "Just the two of you?" he said.

"Unless you count unborns, yes," said Mai, drily.

"You're both pregnant?"

"Yes."

"Where are the men? Our records say there should be five people here, all scientists."

"They're out in the hoverover," said Mai, truthfully. "Collecting samples."

"What about the refugees?" The inner door slid open again, to admit another two soldiers. Mai glanced at one of them, noticing the insignia on his sleeves. He removed his helmet and visor, and stared at them appraisingly. "Just the two of them, sir," said the first soldier.

The officer—an Inquisitor, Mai realized—nodded sharply. "Check the rest of the place," he barked, while his aide removed a com from his pocket. "You're Dr. Long?"

"Yes."

"And you?"

"Kimi Kooiman," said Kimi, after a moment's hesitation. "Sir."

The Inquisitor nodded, and glanced at his aide, who nodded. "You're from Ararat?" asked the Inquisitor.

"Yes."

"What're you doing here?"

Kimi hesitated, and looked nervously at the aide. "I was brought here, sir."

"By whom, and why?"

"Chevalier," she replied. "My parents wanted to get me offworld during the purge; they didn't think I'd be safe."

"Kooiman ..." mused the Inquisitor. "Your name's familiar."

"I have family in the Inquisition, sir."

The Inquisitor raised an eyebrow, and turned to his aide, who nodded again. Mai, startled, realized that the com included some form of lie detector—then glanced at Kimi, and realized that she'd recognized it long before she had.

"And you're *here*?" asked the Inquisitor.

"Yes, sir," said Kimi, quietly. "I was raped. My parents were worried that I might not receive a fair trial during a purge."

Continued on page 49

Thanks to the Cataclysm, the space-time continuum has crushed the world we knew. What has taken its place is unrecognizable.

in the squeeze

fourth day squeezeward, Position Mary expanded her mind.

It was me, Kurtz, that found her. Nightwatch done but unable to sleep, I'd gone walking on deck. It was a bright and brittle morning, dust-cover thin and Sun a burning globe too fiery to look at. Sunlight glared off the *Beneficence's* comm dishes and her sails hung loose and gray instead of billowing and black. The sky was blue and to the north Grand Mesa was brown and sharp-edged, scored with polygons of shadow, gnarled piñons atop it like green bristles on a brush. It was bad. We needed storms and blinding dust. Overnight Cap'n had cut in the engines. If weather like this lasted, we'd go through our batteries and grind to a halt before we even reached Grand Junction.

I went sternside and stood there, holding the rail, feeling the engines rattle my fillings, watching the ruddy Colorado desert for jackrabbit or flatbird. Then I looked up and saw Squeaker, blond-haired boy and my apprentice, looking down at me from the maincastle. He was goggled and dust-masked like a storm was about to swallow us. I pulled out my handset. "I'm not on display for your amusement."

By
David Ira
Cleary

A static crackle. "Sorry, Sir." He pulled up the binocs and turned them southward. He was reg-loving, a martinet in the making, but he'd see nothing today. Bluebeards need wind too.

I decided to check the aft cargo hold.

Into the hatchway, tickled by strips of the broken yellow dust-catcher, down a flight of serrated steel stairs. Disappointment. The door to the hold was ajar, electric light fanning yellow into the corridor. I thought the Cap'n must be in there, fretting.

I went in. "Hello?"

No response. At first look, nothing seemed awry: The 20 blue canisters, a foot in diameter and as long as a man, were stacked undisturbed, half-filling the container rack. Then I saw the clear tube snaking from the right-most canister. A decanting tether—but thick as my wrist, where it should have been no bigger than my middle finger. It stretched to a place the other side of the inventory desk. On the desk, the monitor read in big purple font IT'S A GAS instead of displaying pressure stats for the canisters.

Position Mary sat the other side of the desk. The tether was in her mouth, and her head was enlarged proportionately, with none of the distortions—the bulging forehead, the skin broken by splintered bone, the lower jaw left small while the head above it ballooned—that I'd seen before. But no smile, either. Why pump if you're not going to jump?

Her glazed eyes stared half-crossed at the swollen tether.

I touched her cheek. It was still warm.

"What happened here?"

The Cap'n, tall and lanky, Adam's apple like a fist down his throat, stood in the doorway. His eyes were red. I wasn't the only one having trouble sleeping.

"An overdose, Sir. Position Mary decanted—" I stood and glanced at the meter on the canister—"about 12 ccs of cargo. Probably triple the lethal dose for a person of her hat size."

"You *would* know," Cap'n said.

I wasn't sure if he was accusing me of murder, or reminding me of my past problems. "Knowing's my job, Sir. I'm Medic Two, after all, not just Security."
"God help us, then." His Adam's apple

bobbed as he looked at the body. "How long has she been dead?"

"Two, three hours."

"Three hours ago you would have just been coming off watch."

"I saw her go belowdeck at midnight. I didn't see her again."

"You showed her how to vent the canister?"

"I had nothing whatsoever to do with her death."

Cap'n squatted beside her. She was wearing her GPS suit, or its leftovers: the blue quadrille fit tight against her skin like a grid upon a sheet of paper, but above her shoulders it had broken off, leaving a jagged ruffle at her throat and pieces like black needles fallen to the floor. Cap'n picked one from her pale shaved scalp. "Why would she do this?"

"Hard to say." I'd worked with Position Mary on the Dakota run a couple of years back, but had never gotten past formalities. Navigators tend to the tight-lipped, even on the gravy runs, and Utah was hardly that. "She may not have intended suicide, Sir. Sometimes navigators get the itch to dose because they're frustrated by the gap between what they sense and what they are." Cap'n frowned. "I mean when they're interfaced they feel the world on their skin, but when they're free they're just—"

Cap'n waved his hand. He'd understood me perfectly. It was me that hadn't understood. He was less interested in why Position Mary may have hurt herself than why she had done something to hurt *him*. Her expansion job might keep him running crap runs until retirement.

"I'll file the death certificate with the Company," I said.

"No. You write it up. I'll file it myself."

By-the-book and anal. No surprise here. "And we'll go back to Vail to get a new Navigator?"

He brought out a broken pressure gauge. Its blue bulb registered zero. "We'll continue to Grand Junction. The Navigator pool is full there, they tell me."

"We'll be sailing blind in bluebeard country?"

"I'll pilot us by sight."

"By sight?" I asked. "I'm Navigator Two."

With the end of his gauge he picked a bit of matter from between his teeth. "You watch out for the bluebeards, Lieutenant Kurtz. We'll get along just fine without your navigating skills."

FACTS ARE NECESSITATED. THE BENEFICENCE: 1200 METRIC TONS. Class of '46. Now it's '64. Spaceship running from Boulder CO to Green River UT, from normal space to Squeezeland. Four graphite-core masts, 30 monolayer sails, hull and frame of ceramic-matrix. Battery-powered engines as backup. Tri-wheeled; 12-meter fore-wheel and 18-meter rear wheels. Two missile launchers, 20- and 15-millimeter cannon, port and starboard machine guns. Crew five: Cap'n; Security comprised of myself, vintage '29, and Squeaker; Collin Stokes the Engineer; Position Mary the Navigator.

Strike Mary from that list.

MARY HAD ONCE ASKED ME ABOUT DOSING. "How do you do it so much without swelling yourself up?"

"I dilute my space with water," had been my answer. I'd taken her question as a joke or just plain rudeness. More's the pity. If she *had* been after a serious consult,

I could have given her some pointers. One, you never touch a ship's supply; you keep your own cache, snug and hidden. Two, you don't *suck* off a shiphold canister, not in any circumstances. You use a sterilized capillary infuser, low-dosage to avoid all negative effects. And three, you don't use space for pleasure.

You use it as a tool.

I dosed myself that afternoon, infuser sticky-patched to my throat above the carotid artery for the standard 60 seconds. My toes tingled, I got the need to crap, I watched myself in my mirror, saw the skin around the sticky turn ruddy then the flushed area spread across my face like it was a lily soaking dye. As the flush faded my mind got bright and I saw myself in crystal detail. Golden spokes in green irises, whiskers fresh emergent from pores like little craters, the clever asymmetry of my eyebrows, right one fishhooked down. And my hair dark brown still: each root nearly black.

**It wasn't a
tattoo on his arm.
It was a tiny,
half-formed
face, mouth a
divit and nose
a nub, but with
eyes plainly
moving
behind
tightly shut
lids.**

"What will you do when you see gray?"

Turning around I'm *sure* I saw her sitting on my bed. Gorgeous, silver-haired, and wise. But she wasn't there. She was the Silver Lady. She was a space-rush dream.

I didn't know what I'd do when I saw the gray, but I did know I wanted to catch her.

FOUR PM AND I WAS CLIMBING THE MAINMAST. WE FINALLY HAD a breeze, a freshet from the southeast, hardly a stormfreak but enough to fill the sails and let the Cap'n cut the engines to 25 percent. The sky was blue to the north and streamy with gray clouds above, and layered with levels of increasing darkness with the black center of the storm above Battlement Mesa to the south. Ten miles farther south and we'd be in the strongest current, pushing 50 and recharging batteries to boot; we'd be shooting the rapids, riding full force the east-west airstream running counter to the density gradient. But we'd also be in the dust, riding blind.

"What're we doing in the open?" Squeaker asked me as I climbed into the forecabin. Blond buzz-cut hair, tank-like build, one year out of the Academy. "The SLA took a ship along the Colorado River last week."

SLA stood for Space Liberation Armada. Or Shit-Lined Assholes, depending on your viewpoint and degree of crassness. "Navigator Mary died," I said.

"Damn."

That's the strongest language you'd get from Squeaker. He pulled off the headset and goggles. Pink, raccoon-eye shapes left behind. He busied himself with checkout diagnostics—the goggles, the headset, weaponry controls—as I explained the circumstances behind Mary's death and Cap'n's suspicions regarding myself.

He logged out and saluted me, then, out of the 'castle and one rung down the ladder, he said, "Sir, if you don't mind my saying, I think the Cap'n's making a big mistake. I don't think you had anything to do with Mary's death. I don't believe for a second any of the rumors about your using cargo."

"I appreciate your support."

His real name was Barry.

I USED TO THINK IT WAS AN ACT, A SARCASTIC PUT-ON. BUT I HAD dosed once with him nearby and sensed a purity of heart and innocence of motive that made my face burn with shame.

Pity I couldn't be so charitable with the Cap'n. Some mistake from years ago had landed him on crap runs and turned his heart to stone.

Some mistake like sailing without a Navigator.

Now we were following I-70 with the storm edging up against us. Only dusk but the Sun a yellow saucer on the ridges ahead, dust-dimmed and seemingly flattened by the squeeze. I'd raised the 'castle sandshield because the blown dirt was stinging. Grating screech where the plexiglass did not seal completely. Grand Junction was reporting no bluebeards; the closest weather drone was reporting a moderate-to-severe stormfreak closeby. So that I could hear this breaking news over the screeching I'd maxed the headset's volume.

The black cloud like God's great boot about to stomp us.

On the console the forward cam showed sand sweeping past the highway windwalls and drifting across the asphalt.

"Kurtz!"

So loud I half expected blood from my ears.

"Right here, Sir."

"Given the SLA situation, it would be a good idea for us to get off I-70."

"In a storm?"

"There's no better way to lose them."

"Want me to navigate?"

"I'm piloting manually. Contour map shows a valley about a mile onward and we'll follow it. You make sure we're not about to smash into something unmapped the storm might have put there."

"A GPS suit would be better than infrared goggles."

"This is the standard procedure when a ship does not have a Navigator, Kurtz. I was under the impression the goggles had a radar mode."

"That's correct."

"You will use the radar mode. You will provide me with indications of unmapped obstacles as we approach them and I will adjust course accordingly."

"Captain, it might be safer to shelter out the storm in a ravine than try to navigate like this."

Silence from the Cap'n's end. Peaks like purple cardboard cutouts atop a yellow vagueness where the sun was. The whistling storm a black umbrella above. "Maybe you're right, Kurtz. Maybe Ensign Barry would be more appropriate to this task."

Scathing rejoinder suppressed automatically.

"He's just a rookie, Sir. I can do a better job."

STANDARD PROCEDURE? CRAP. ONLY A NAVIGATOR, GPSED so you felt the lay of the land like the flex of your muscles, and debris like coarse cloth abrading your skin, could reliably guide a ship off-route through a storm. I wasn't sure if the Cap'n was demented, squeeze-crazed somehow, or if he was hoping to founder the ship on a wind-tossed trailer home and put the blame on me. If Cap'n thought I'd played a part in Mary's death he *should* have put Barry in the 'castle. Or maybe he *was* following some obscure rule to the letter.

At least he had the sense to retract the sails and put us back on engines. Without a Navigator an old ship like the *Beneficence* couldn't adjust its sails fast enough to take advantage of stormfreak winds.

And this was looking to be a major stormfreak. Portions of the Colorado Plateau thumped into the shipside; rocks pelted my sandshield; dirt and rubble swept past like grimy curtains. Without goggles it would have been lightning-embroidered blackness out there; with the goggles, radar-moded, I saw the moving things as blurs and I-70 and the mountains and every other fixed object as wire-frame renderings.

I saw a flying goat, and I think a camper shell.

"There's a narrow valley to port just ahead," said the Cap'n.

"The approach looks clear," I said.

It was more a canyon than a valley, walls contour-mapped like green picket fences, stream at its center lined by scrubby piñons. We'd roll right over those little trees no problem. "I'm sure you know," I said, "that a flash flood would slow us down. And tornadoes have a liking for following little canyons in bad storms."

"I'm sure the SLA knows those things too," he said.

Ships are heavy. Going off the highway we crushed the steel retaining barrier. But ships are smart, even old ones. The barrier was there because of a fairly steep decline. Had we been some precataclysmic vehicle, a tanker truck or semi, we'd probably have tumbled. But the *Beneficence* autoshifted lead spheres through its ballast tanks, and lowered the axis for its forewheel considerably to keep us upright.

Me, I lost my balance and yelped as I slammed against something sharp.

"Are you OK?" Squeaker's voice.

"I'm fine," I said. The sharp thing was in my pocket: a strip of capillary infusers. "You're off duty. Why aren't you sleeping?"

"Storm's noisy. Should I man the lower console?"

"Do it," said the Cap'n.

The lower console was belowdeck, ringed by steel bulkheads, a safe hole if you were worried about small-arms fire but, like the bridge, mostly blind now, feeds to the forecams and aftcams lost, contour map erratic. You could still fire any weapons you pleased but it would be like shooting with one eye gone and the other squinty.

No point in Squeaker being down there except for the Cap'n to assert his authority over me.

I pulled out the strip of capillary infusers and detached one just in case.

Cap'n steered us into the canyon. Sudden quiet, no pings against the sandshield and no big flying objects. Wire-frame rock walls rolled majestically past us and you could hear soft cracks as the *Beneficence* snapped apart the tallest trees. I didn't relax. The lull was just that, an interlude, and even visually you could see the storm ahead like a mean dog about to break its leash.

The radar showed a moving bogey in the storm.

"Cap'n," I said, "we may have a funnel ahead of us."

"Class?" Cap'n said.

It diminished, enlarged, diminished again, as if unsure about the face it wanted to present to the world. Or was in a transition state, about to change from one funnel into two.

"Class II, probably going to calve."

"We'll continue forward then. You keep me apprised of the funnel situation."

Class I funnels make loud harmless noises. A Class II funnel could lift the ship. Or rip the 'castle clean off, send it spinning and me broken-bodied 20 clicks down-gradient.

"We're keeping the *same* heading?" I asked.

"We don't have time for any other course of action."

True enough. Its batteries depleted, the *Beneficence* couldn't turn and outrace the funnels. But that was assuming the funnels kept their speed and vector.

"Cap'n, request permission to come belowdeck to ride out the storm."

"Request denied, Kurtz. I need you up there."

The bogeys split apart distinctly then reconsolidated.

I made up my mind to save myself.

I'd climb down and shelter in the aft cargo hold. But I wouldn't be derelict in my duty. I'd still have the goggles, and though I'd lack the console and its cams I could more than compensate.

I could exchange one tool for another.

I pushed the capillary infuser against my throat.

My toes tingled, my bowels shook, my thoughts grew sharp and crystalline. I saw the *Beneficence* as if from above: a rat stuck in a dead-end maze. And ahead I saw the funnels.

But they were not funnels. When you're dosing funnels look like twisted glassworks, radiant and spinning. These were bullet-shaped, with surfaces paisley-patterned with a dozen shades of green and blue. The vision was dose-related but it pointed to a fact: These bogeys were radar-camouflaged. Radar camouflage indicates one of two things. Either the bogeys were military, Company ships.

Or bluebeard ships of a kind I hadn't seen before.

"Cap'n, we have two ships approach-

ing us at six hundred meters."

"ID?" Cap'n said.

Would it have mattered if I'd answered right away? Could we have defended ourselves successfully? Or would an aggressive course of action have cost us all our lives in addition to our cargo?

Questions for the actuaries. Me, I was preoccupied. Not just by the architecture of the ships—looking closer I saw they were double-axled, rear-wheels retractable, and I saw gunports, and I saw radar antenna like stubby beetle's wings—but also by something else, something warm I sensed inside one ship. Not the prickly pinpoint warmth when dosing I associate with bluebeard crew (though I felt that kind too). A warmth promising wisdom and mercy, and so intense sweat trickled down my face to collect at the bottom inside of my goggles.

"ID?" Cap'n said again.

"Unknown," I said.

"Course?"

"Toward us, three hundred meters."

"Do you judge their intentions hostile?"

I said nothing because it was then I identified the warmth.

It was the Silver Lady.

"Lieutenant Kurtz, I repeat: Do you judge their intentions hostile?"

The Silver Lady might ask hard questions. But in that storm cloud, sand-blast arroyo with real twisters likely, she was a presence of stability and concern. "No, Sir," I said.

The ships grew close together and the bogeys merged on the radar. Then one accelerated.

"There's a ship beside us!" Barry. "Should we initiate defensive measures?"

"Negative, Ensign," I said.

The ship that had accelerated moved behind us and matched our speed. The other ship, the Silver Lady's, was still vectored our way but decelerating. "I see her now!" Cap'n cried. Then, over a public radio channel: "Unknown vessel, you are on a collision course with the cargo ship *Beneficence*. Please alter course immediately."

But what harm could the Silver Lady pose?

I felt a shock and saw a fast blue light then I stood in darkness, faint smell of burned-out circuits and the comm lines dead. The only sounds the wind and the 'castle creaking.

Then two mild thuds as the *Beneficence* was grappled.

WE'RE ENJOINED FROM HAND-TO-HAND COMBAT. IT KEEPS US pretty and the Company's insurance premiums cheap. So I was surprised to hear two gunshots, small caliber, followed by shouts and, seconds later, the loud snaps of an automatic weapon. Somebody was braver than regulations permitted, or maybe the bluebeards were more vicious than I'd remembered them to be.

I couldn't believe the last. I sensed the Silver Lady, on the deck below; her presence weaker now though her mercy was intact. She'd see no harm was done. And the weakness, I realized, was a matter of my perception—the ships must have sent an electromag bolt through the ship, frying the circuit boards and also reducing the power of the dose.

I was still tracking her movements, touching her gently as if she were a fragile ornament, when a bluebeard instructed me over a PA so loud it must have rated 10,000 watts, to climb down unthreatening from the 'castle.

Abraded by blowing sand and blinded by searchlights, I descended.

Only two bluebeards were on deck to meet me: a rasta-locked older guy with an automatic rifle, and a young guy in an Arab sandhat and a sleeveless shirt that showed a face tattooed on his skinny bicep. "You're security?" the older guy said.

"Yeah."

"Shit," he said, less a put-down than a commiseration.

The young guy frisked me, rough-handed and glaring like he took my existence as a personal affront. I hardly needed the dose to sense his hatred but there it was: as vile as the Silver Lady's mercy was pure. Only after he'd given a painful hand-crack to my nuts did I see it wasn't

There are
some that do not
realize their own
goodness. I
would have
helped her
understand except
then the space-
crash came,
as brutal
as I've ever
felt it.

a tattoo on his arm. It was a tiny half-formed face: mouth a divit and nose a nub but with eyes plainly moving behind tightly shut lids.

I understood his anger.

He was a Cataclysm baby, squeeze-mutated by some process in the womb.

His expression didn't change when he found my strip of infusers.

"Our boss wants you downstairs," said the older guy.

SHE WAS ON THE BRIDGE, TESTING CIRCUITBOARDS BY THE LIGHT of an electric lantern. Hair not silver but white; giving me a pain in my gut sharp like a spacecrash much too early: she'd cataclysmed already, aged overnight. But she turned to see me and I saw though her hair was white her face was young. Genes mostly Asian with maybe a little Amerind mixed in. Her eyes kind. "So you're the good man who tried to give up his ship without a fight."

"Tried?" I said, puzzled by the word and also by the cold veins of anger I sensed spreading through the greater warmth she radiated.

She looked at the rasta-locked guy then came over to me and flashed a penlight in my eyes. "See how slowly the pupils contract? Space-induced intoxication."

She smelled of hardcake soap and dust and, faintly, a sweet perfume. Her proximity made me tremble.

"Space is a tool," I said.

"Is it?" She still stood close to me. "Then maybe it's one your commanding officer should have used. He wasn't nearly as accommodating as you were nice enough to be."

"He shot at you? Is he OK?"

"He was injured badly. The man he shot is dead."

"I'm sorry," I said. "He didn't know about you."

"What does that mean?"

There are some that do not realize their goodness. I would have helped her understand except then the spacecrash came, as brutal as I've ever felt it. I sensed her icy anger but no warmth. I smelled blood and powder burns. I saw crow's-feet by her eyes and fine wrinkles by her mouth. I saw Position Mary's head bigger than a basketball. I saw each of us alone riding a gradient to a solitary cataclysm.

My gut spasmed and groaning I sat down.

"Go put him with the others," the Silver Lady said.

THEY WERE IN THE EMPTY FOREHOLD, AT LEAST CAP'N AND Squeaker. Cap'n was unconscious beneath a blanket, his eyes patched over with gauze, more gauze, bloody, just visible at his throat. He breathed shallowly and there was an IV drip plugged into his arm. Squeaker sat beside him, electric lamp casting a menacing shadow on the ceiling.

Although I felt bad I had to check the Cap'n's wounds.

"Get away," Squeaker said. "Don't you touch him."

"I'm Medic Two," I said. I put my hand on the blanket.

"Get away," Squeaker said, and then he knocked me over, was on top of me, knees tombstone-heavy on my elbows. He hit me in the face, once, twice, then looked down. His look of anguish matched my mood.

"I believed in you," he said. "I *believed* in you."

I said nothing but only closed my eyes.

MORNING TIME AND CAP'N WAS UNCONSCIOUS BUT ALIVE. Squeaker sitting asleep in a chair beside him. Cap'n's breath phlegmatic or maybe bloodetic but regular, Squeaker's mouth wide open though he was breathing silent. Daylight cracking downward past the hatchdoor and one fluorescent ceiling light on above us. Squeaker's teeth impossibly lustrous. I wanted to shut his mouth but sitting up felt nausea and saw Collin Stokes awake on a bedroll, watching me.

"You prick," he said.

I raised my hands palm-outward to show I was harmless.

Stokes looked puzzled. Pale-faced, black-haired, crinkle-browed.

"You were dosing, weren't you?"

He was playing with me. He'd known everything I'd done and was going to taunt me till I cursed the Silver Lady's name.

"I'm sorry," I said.

"Shit," he said. He looked carefully at Squeaker and the Cap'n then whispered to me: "It might have been for the best. Him driving us blind in a storm might have killed us all."

I noticed then the engine hum and figured out the fluorescent: Stokes must have fixed the engines.

LATER THAT MORNING THEY BROUGHT US, EXCEPT FOR THE Cap'n, up on deck. Blue sky tea-stained with the dusty remnants of the storm, bone-white ridges to the north and south, sails up with an eight-knot wind behind us: The pirates were taking us into Utah. One of their ships still grappled to the *Ben's* stern: ground-hugging, less than five-meters high, delta-shaped more like an airplane than a boat. Its glossy black sails probably photoelectrically fibered, to catch Sun and wind. A click ahead the other ship churned a dustcloud.

Each of us was handcuffed.

"Shotwell wants you to see how you've fucked the environment," said the rasta guy. "See some of the Company's unsatisfied customers."

"We don't deliver to this valley," Stokes said.

"Exactly," said Rasta.

It made me burn in the chest that the Silver Lady was named Shotwell. Or was that just the unease, visceral and free-floating, you get when you're moving squeezeward?

Ten minutes later we berthed at a small town.

The bluebeards prodded us down the gangway with their guns, Rasta chatting halfway amiable, a second guy, squeezeborn, tossing in the occasional bitter comment, and the face-arm guy still pissed-off silent.

The place was a squeeze-town like any other. Once-paved streets gone back to dirt, sidewalks cracking, wood-framed houses warped with windows bulged or broken. It was the periphery here, though, the edge of the squeeze, so things not carbon-based were hardly affected. Cars looked fine except for rust and burst tires. Some of the stores on the main street, metal-framed no doubt, looked like they might be open for business. Maybe some *were*.

There was a Wells Fargo on one corner and it was here the bluebeards took us.

Inside the counters had been ripped out and replaced by mattresses. Squeeze-kids, cataclysm babies, were lain two to each mattress. Some had the standard mutations: cleft palates, fur-covered bodies, fins for arms. Others more interesting: a homunculus kid, trunk and limbs spindly, hands larger than an adult's, big head his atrophied neck could probably never lift; a girl with eyes like diamonds, faceted and glittery; a little boy with arms long and pliable as a garden hose and which he'd coiled around his body multiple times, hugging himself tightly.

Squeaker tried to turn away, but Face-arm prodded him to keep looking with his gun.

"What's the point of this?" I said. Two other pirates were bringing in one of the space canisters from the *Beneficence*, pushing it between them on a dolly. "Space won't fix mutations."

Face-arm pointed the gun at me.

"Easy, there," said the Silver Lady, following the dolly-pushers in. When Face-arm had lowered his gun, she said, "Space will ease their suffering a little. Surely, you can't dispute *that*?"

I shrugged, embarrassed, unsure whether she was wise or all truths about me were available for anyone to see.

"And can you really say that if the mothers when pregnant with these children had been given an adequate dosage, that these children wouldn't have had a better start in life?"

"No," I said.

"But we don't deliver to this valley," said Stokes again.

AND THE BLUEBEARDS DID. THE SILVER LADY (I WILL NEVER CALL her Shotwell) made sure the townsfolk knew it. She set up shop in the former bank, decanting the cylinder then delivering the doses herself via a three-gauge polymer tether to the kids. All the while sermonizing to the townsfolk who had crowded inside or pressed like

paupers against the building's plate-glass windows. "It doesn't have to be like this," she'd say. "The Cataclysm doesn't have to last forever." Touching the tether to the thin pale throat of the big-headed kid; wiping his brow as vessels blazed beneath his skin and at last he smiled. "And you don't have to be the ones suffering unjustly. You don't have to be the ones who feel the squeeze while communities 50 miles southward enjoy the benefits of regular deliveries." Townfolk looked at us now, menacing but uncertain; while we were the villains in her story they probably couldn't appreciate the fact. Too long squeezed your brain gets tiny. "Which is why the SLA's helping you today. Why we bring you space when others don't. And why we're committed to *ending the Cataclysm itself*."

"What does *that* mean?" said Stokes.

Both Squeaker and I stiffened automatically. Stokes's question had a combative tone that even the townfolk noticed. One guy with a cap so low on his head he had to be seeing through the mesh took a step toward us. "You don't talk that way to Shotwell."

"It's all right," the Silver Lady said. She went to the guy and touched him. "The man had a rough night. Give him some slack. And it's not that bad a question anyway."

"He's not respecting you."

"It's OK," she said, more commanding now than gentle, and only then did the guy relent, nodding and stepping back. The Silver Lady returned to talk and dispensation. "We don't know what started the Cataclysm. Could have been global warming, or humankind's irresponsible reproducing, or even the solar system's passage through a troubled zone of the space-time continuum. And we're not sure how we can end it. But we've found ways to reverse its worst effects." One being metered doses, which she was delivering to the townfolk now. They'd lined up meek but as the first, an old man no more than five-feet tall, got his dose, scalp flushing visibly through his thin white hair, they forgot themselves and tried to rush her. The bluebeards seemed to expect this; Face-arm and the two who'd pushed the dolly moved in around her. Grabbed shirts, pulled arms, slapped butts; not as rough

as we would have been but it got the townfolk back in line. The Silver Lady continued composed, replacing the capil-

lary tip at the end of the tether, touching it to a young guy in a faded business suit whose teeth were too big for his mouth. Talking. "Our best idea is to change the *balance* of the squeeze. Flatten the gradient, even things out, *equalize* the density over as large an area as possible."

Stokes bristled but said nothing.

"We would get more space?" said the guy in the suit. The dose left the big teeth seemingly framed by cherry-red lipstick.

"Yes. But indirectly. What we plan to do is *release* space into the environment near Salt Lake City. What we plan to do is place enough space there that the density gradient will change so all will benefit."

I was crashed and stupid. She could have been talking Urdu, and I'd be nodding gamely. But Stokes was razor-sharp. "Impossible," he whispered to me. "She's either crazy or she's lying."

"Careful what you say," I said. Words automatic but me too groggy to be sure of their intent. To warn Stokes against the cap-guy, who was just getting dosed? Or to caution him against impugning the Silver Lady's honor?

THERE'S THREE STAGES TO SPACECRASH. FIRST, THE POST-DOSE trough, the haunting darkness and despair. Second, the dullness following, when your mind is slow and your conviction that you know the world turns into a fear that the world knows you instead. And third, the claustrophobia, when you're alert and rational save for a perception your skin's shrinking around your bones and any room you're in is a prison.

I reached the third stage that afternoon. I was in the forehold with Squeaker and Cap'n. Cap'n was still breathing raspy though sometimes surfacing now to groan or say a name ("Maude"). Squeaker was playing nursemaid, refusing my physical assistance but accepting my advice. "Take his temp," I told him. "Gray strip in the medikit you put across his forehead."

"I know *that*."

"We got to give him antibiotics if he has a fever."

Squeaker fumbled through the kit, rustle of packets and taps of instruments loud but not unbearable. Then he found the temp strip—stiff when cold—and pulling it out he aligned it, by chance and momentarily, with the edge of one of the metal floorboards. I saw the parallel lines the floorboards made, and how many of them, through the bars of the empty canister rack and the grooves between the ceiling tiles, extended around the room; and it occurred to me that I was privileged to have not one noose but many, with them all about to tighten.

I closed my eyes. My pulse was up, my skin was clammy, my shirt was a size too small. "Put it on for 30 seconds," I said to Squeaker.

"I'm not stupid, Sir."

His voice was too close. I slid along the wall. "I didn't say you were."

"I'm not the one who dosed on duty. I'm not the one who gave up the ship without a fight."

His voice was still too close; could the room be getting smaller? "Cap'n put us in an untenable position."

"If you'd been sober you could have gotten us out."

I slid up against the canister rack. The metal, cold against my arm, made me think of Position Mary, jammed into the freezer. How far squeezeward would we have to go before this room shrank that far?

And would Mary be cold in her claustrophobic box now, if she had asked me point-blank for advice on dosing?

"It reads 40."

"Should be ampicillin vials in the kit. Plug one into the drip, in the socket on its side. Unless you object to antibiotics too."

"Screw you, Sir."

His mild curse left me nauseated. There was a groan, from me or the Cap'n I'm not sure. Then the hatch was unlocked and opened, and the Silver Lady said, "I'd like to see you, Kurtz."

Stokes came down the staircase, looking sullen, and I left the hold gladly.

WE'D REACHED ANOTHER TOWN. SEPIA SKY AND ROUND HILLS sparsely sagebrushed like the heads of balding men. The town itself a development of woodframed houses mostly collapsed now, though

Some had
the standard muta-
tions. Others more
interesting: a
homunculus
kid, trunks
and fins spindly; a
little boy with arms
long and
pliable like
a garden
hose..

from deck you could still see the wheel-shaped street plan, cul-de-sacs at the end of each spoke. The road in had a gate the ship could have crushed, but we berthed outside and walked—the Silver Lady, the Rasta guy, and me, unmanacled this time. A twisted sign read *Environ: A Retirement Community*.

"Sure the kind of place I'd send *my* folks," said Rasta.

"It's not so bad," I said. Being outside had eased my nerves somewhat. And this far squeezeward things, if more miserable, were at least *equalized*: the worst mutations did not survive and those who lived tended to be about three-foot tall and stocky. Two were in the hard clay street and followed close behind us, one holding out his cowboy hat upside down imploringly. Neither of them spoke.

"Isn't it?" said the Silver Lady. "Average lifespan of 25, average IQ of 60?"

"You're right." Even chastising me her words held comfort.

She led us across a parking lot to what had been a strip mall. Or maybe still was. Some shops were gutted and burned-out but others had wares: farm tools, bins of grain or seeds, garments made from burlap sacks and cardboard. The last shop smelled of sausage and had animal pelts hanging from a board: crows, prairie dogs, the saucer-shaped snakes you sometimes see squeezeward, a dark leathery thing that looked to be the dried skin of a deformed human infant.

The Silver Lady saw my troubled look.

"You're a sensitive man, for a security officer."

"I've seen worse."

"I'm sure you have." We rounded the corner and started across a street toward a Safeway. "Still, you strike me as a good soul. You seem like you have the capacity to care."

"Everybody cares."

"Do they? Does the Company?"

"The Company distributes space free. It doesn't have to do that."

Another squeezer had come out of one of the shops and joined the others following us.

"No, it doesn't. But distributing doses to the same few unfortunates along the I-70 corridor doesn't do much to help anyone else."

"So you dose these guys. Robbing Peter to pay Paul."

"We visit a *lot* of communities. Mostly to give them hope. Because our main plan is to equalize the gradient."

"Stokes says it can't work."

"Stokes, I think, is concerned with the Company's interests. There's no profit in fixing the gradient. But how about you?" She touched me then and despite my crash-dulled state I felt something of her wisdom. "Are you a Company man? Or would you like to help humanity instead?"

Nausea returned. "You're asking me to Benedict Arnold."

"I'm asking you to serve a higher cause."

"Let me get back to you."

"Don't think too long."

We went into the Safeway. Reek of shit and hoot of owls, with the few lanterns at the far end not burning bright enough to resolve the shadowy mysteries moving in the aisles. I felt uneasy and would have gone no farther but the Silver Lady took my hand and led me. Past the check-out counters I figured out the moving things. They were bonsai cattle, size of hefty housecats, with intricately curled horns they liked to rub against your legs. The hooting was their moo. The shelves were stocked with hay they fed on.

A moment's panic when a group converged around me, hot against my calves, but this time laughter at my expense, and not the Lady's lead, prompted me to move.

The man who laughed was eight foot tall at least and so thin, so *narrow*, his shoulders seemed attached to his neck and (he was shirtless) you could see not just his ribcage but the bulging of his viscera beneath it. His forehead rose eight inches above his brows. I'd never seen a doser expanded so strangely.

He sat with a bonsai calf on his lap.

"You're a very funny man," he said to me.

"Thanks," I said. I figured him for the local potentate or mayor and opted for politeness. I took into account also the sleepy-looking short guy standing by the deli counter holding an M-16 rifle.

"No. Really. And your Company is very funny too."

"Bunch of clowns."

"I'm holding a good joke." He pointed to the calf. "Best joke of all, is the human baby born very small that you can fit in your hand. Do you know that joke?"

"I'm not sure," I said.

"You *should* know it. You wrote it. The punch line is the baby would make a good cowboy for the bonsais if it wasn't stiff and blue."

"That's not so funny."

"You have a better joke? Go on, tell me your joke."

Although he'd been insulting before, he'd been somehow jolly in his tone. Now the jolliness was gone. Or was the change more in myself, because suddenly I saw a white-haired man standing beside the narrow guy, transparent so you could see the cobwebbed metal trays of the deli counter behind him, and I saw the man was me.

Me right after cataclysm.

"Come on, you Company comics must be full of jokes."

And staring right at me.

"He's a friend, Lubbock," the Silver Lady said. "He may help us."

"He wears the Company logo."

"That might change."

Just her words and the white-haired man was gone. I was cold and shaky, though, with the clamminess returned.

"Shotwell is serious. I like that. She doesn't make jokes. She brings gifts to make the jokes go away." The narrow man laughed. "Do you have any gifts today?"

"I do."

About a dozen squeezers had joined us now, expectant but unlikely to riot: The seriously squeezed don't have that kind of moxie. The Silver Lady's ritual was different too. She wore a black waistpack, the kind you use for shotgun shells, but instead of shells each loop contained three capillary infusers. She pulled out a set, handed two to the narrow guy, then dosed the guy holding the M-16. He looked awake for the first time.

The narrow man took one infuser in one hand and the second in the other then dosed himself simultaneously both sides of his neck. Aside from red spots at the point of contact his skin did not change color.

The Silver Lady dosed one of the squeezers who'd been waiting behind us, then gave two more infusers to the narrow man, who pushed them into his pocket. She continued this pattern with each squeezer, moving down the row of them communion-like and adding to the narrow man's hoard. I looked at her hopefully as she worked but she ignored me.

When she'd dosed the last guy, she bowed to the narrow man, and he double-dosed himself again.

His cheeks got ruddy and you could see a red fist-shaped thing pulsing in his chest.

His heart.

"Your friend's in a bad way," he said. "I hope you'll give him his dose too."

She shrugged. "I might, if he agrees to help us."

SO THERE WAS A FOURTH STAGE TO SPACECRASH. GRAPHIC spasms of my space-starved brain? Or actual images leaking backward from the future? I was inclined to think the last. Although I'd never heard these symptoms reported, heavy dosers *are* a secretive bunch, and I *had* heard of strange visions sighted squeezeward, houses that could walk or great beasts infinitely kind or boxes built for storing dreams, and the reporters of these sights, if they were of a scientific bent, reasoned that space squeezed far enough squeezed time too, so that the happenings of centuries ahead could be witnessed now.

But their visions had been outward, while mine were strictly selfish.

I stood on the bridge with the Silver Lady. She was testing circuits in the navigation console. She hoped to make its monitors show video feed again. Likely she couldn't do that when Stokes had spent days there unsuccessful. As I stared at my reflection in the darkened center screen, I believed it was only her touch keeping the white-haired guy away.

"Hard to believe your Captain piloted you with *contour* maps."

"This is the guy who shoots pirates with a .22," I said.

"And kills them. Tell me, if he wasn't willing to use you as a real Navigator, why would he use you as a human camera?"

I stared at her and knew no response could do justice to her intuition.

"Close your mouth," she said. "Anybody can read a ship's log."

"Oh." I watched her pull out then replace an IC board. "We're not exactly pals."

"Evidently. Did he blame you for the death of Mary?"

"I had to be up there for security, anyway."

"Still. A prudent man wouldn't have endangered an officer in a storm. Did he think you supplied her space?"

That wouldn't be in any log, unless the Cap'n recorded his most secret motives. "Probably."

"I don't think you did," she said. "I think he's either a poor judge of character, or holds a grudge against you for something else that happened."

I shrugged. "I didn't give her anything. But I've got a reputation."

"As a dealer? Or as a doser?"

"More the second."

"How often do you dose?"

"Three times a week, maybe."

"You mean twice daily?"

I tried to keep my composure but she would not be fooled:

"I've seen enough dosers coming down to know the signs." She stuck the circuit probe in her waistpack and sat at the console. Moused her way through menus and configuration settings. "I'm not opposed to space per se. You need a weekly dose when you're in the squeeze. But I believe its recreational use leaves the abuser more vulnerable to the squeeze's effects."

Abuser rankled even from the Lady. "I use space as a tool."

"So can I." Mouse-clicks meant to summon the video; an instant's fuzz on the monitor; then nothing. She looked at me. "We need a Navigator. Your Captain shot the one we'd brought. We might be able to get you a dose a day."

"I need two."

"Can't spare that much."

**We don't
know what started
the Cataclysm.
Could have
been global
warming, or
even the solar
system's passage
through a
troubled
zone of
space-time.**

"No deal, then."

"Too bad." She got down from the chair and returned to the open belly of the console. "You tell me if you change your mind."

I'll do that, I was going to say, but then I saw the white-haired guy, sitting in the chair, staring at the blank monitor as if it displayed some unspeakable horror.

Or a fifth stage of spacecrash.

I closed my eyes and whispered, "Let's work something out."

THE SILVER LADY SHAVED MY HEAD THAT EVENING. BUZZ OF ELECTRIC razor, touch of fingers, her close-by smell of dust and solder and apricot shampoo. Half-inch hairs falling to the blue towel around my shoulders. Twice I examined ones suspiciously light-colored but I determined they were blond, not white.

"That's what you're afraid of?" she said. "Everybody goes gray."

"Not overnight."

"No. It takes years." She pulled at her hair. "Or responsibilities."

"There was a guy at the Academy, 20 years old and as free-spirited as a dust devil, who wanted to be a Navigator. Thought he'd improve his chances if he spent time in the squeeze. So he borrowed a truck and drove down to Oklahoma for a week. Came back wrinkled as a raisin and walking with a stoop."

"And gray?"

She was standing beside me shaving the last of my scalp and a strand of her white hair was draped across the towel. "He was my brother. He didn't live to 25."

"I'm sorry." She put the razor away then brought out a navigation kit: GPS suit, dongle, tube of electrode paste, all shrinkwrapped together. "I'm guessing you're older than your brother was. But you're not old yet."

"I've got his genes. I've only gone a day without a dose."

She tore open the kit. "Don't worry. You'll get your dose after we configure the suit."

SHE LEFT SO I COULD CHANGE. THE SUIT WAS AS COMFORTABLE as cold perforated plastic can be, and the blue gridlines were like veins grown to some anal engineer's ordered expectations. Still I was glad to be suited up, and only a little worried about seeing the white-haired guy again. I pulled on my shirt and pants, and then the Silver Lady came back.

"Looking good," she said. "Want to lie down?"

She wasn't being coy. Officially it's the Interface Support System, but everybody calls it the navigation bed. A rubber web supported by a steel frame and containing electronics for amplifying the signals sent between ship and suit. Every bridge has one.

I lay face down on ours.

The Silver Lady took the dongle, gray pencil-shape with pronged jack at one end, and ported it into the navigation console.

Smell of lightning, sound of flame, and as my senses realigned I became coexistent with the ship. A rear wheel spinning through each hip, forewheel through my chin, masts my arms and legs with toes and fingers sails. Might seem awkward or even painful and it is if you're just learning but practice leaves it tolerable and the best can navigate for days in comfort. Sagebrush rolling beneath my eyes, my cheeks scratched by runty pines: a closeup view not particularly useful but you can zoom both in and out and I zoomed out so I could see the ship, sails taut in a fresh trailing wind, from a point a click above.

In the sunset rocky spires cast shadows like black claw marks across red meat. I zoomed out to 10 clicks and saw a mountain pass probably three hours ahead and beyond it the Wasatch range, which borders on Salt Lake. The pass was steep enough that we'd need to draw from the batteries to climb it.

Experimentally I flexed my thighs, to power up the engines.

No galvanic tingling; the engines would not fire.

I twisted my left foot a little to take advantage of a crosswind.

My foot moved but the sails did not change.

I turned my head hard to the right but the wheel did not follow.

Taste of pale, sound of smoke, and I was in the navigation bed, unjacked and shivering inside the bridge. The skin of my hands and knees cold to numbness where I'd touched the floor.

"Excellent."

Holding the dogle, the Silver Lady watched me appraisingly. Of course. She'd only configured the suit's perception card, not its response generators. I could have strained and struggled till next year to no effect.

No effect save turning my hair white.

Pulse pounding, nausea revisiting, I said, "Can I get the dose *now*?"

THEY GAVE ME MARY'S CABIN, RASTA AND FACE-ARM HAVING occupied my own. I was creeped upon entering, for her effects had not been touched, and the books on gardening and the pictures of a blonde-haired woman (sister? lover?) reminded me I knew hardly more about the things from her past than I did about the visions from her future, or whatever demons drove her to overdose. She died as she lived, in private.

My disquiet did not keep me from dosing, though. I didn't even wait to take the GPS suit off, instead peeling it to my collar then clamping the capillary infuser to my throat.

My fingers tingled, my bowels shook, my thoughts got fast and all-encompassing. For a second I was the ship again, this time not just Navigator but Captain too, with the Silver Lady a warm presence inside, to advise me of the course I'd ultimately determine. There were other presences, flickering and weak, but I couldn't name them until I'd come back to Mary's cabin.

The other bluebeards, but my former colleagues too. Stokes and Squeaker and, hanging on still rickety, the Cap'n. *Former*? Was that the term I wanted to use? Was I a bluebeard now, and a Company man no longer?

I looked at myself in Mary's mirror. Neither gray hairs nor intimations of the white-haired man, just me in my flush-faced prime. But what sort of prime would it be, with its main act a betrayal?

What sort of prime would it be, me playing Benedict Arnold?

One sullied by a blackened conscience.

One with rushes marred by the recollection of my worst deeds.

With the chief among them, along with the surrender of the ship, the utter failure to recognize that Position Mary had asked about dosing not to joke or insult but for directions on how to fulfill a desperate need; and by not offering advice about the thing I know the best I was the one who'd caused her death.

I saw then that the blonde woman was Mary, younger than I'd known her with her head unshaven, and I decided that though I'd done nothing to help her while she was alive, I could at least do honor to her memory.

I resolved to save the ship from the Silver Lady.

WE'D STARTED UP THE PASS BY THE TIME I WAS ON DECK. MY senses charged both by dose and resolution. Vibrato of the engines. Purple mountains majestic around us. Clouds like jet trails streaming west above, high enough to reflect gold the sun which for us had set already. Tailwind, cool against my shaved head and carrying smells of pine and aspen and a sweet odor I could not name but which assured me somehow I was correct in my resolve.

I went to the hatchway leading to the forehold and there was Rasta, standing relaxed with rifle slung over shoulder and a joint burning in one hand.

"Hey dude," he said. "Want a puff?"

"Thanks," I said. The hit warmed my lungs but otherwise had no effect. I passed the joint back. "Good shit. Suppose I could go down there? I think I left something."

He smiled. "Sure thing."

I was glad it was him and not Face-arm.

He set the joint down then keyed a code on the lock and pulled open the hatch. "After you."

"OK," I said uncertainly.

He laughed. "For your protection, dude."

I climbed down the stairs and he followed me.

Cap'n was asleep, breathing quieter now, and Squeaker was propped up against the wall, sleeping also. Behind me Rasta had raised his gun.

"Nice haircut, Kurtz."

It was Stokes. He'd just opened a ration pack and held it in his cupped hands as if trying to warm his hands as well as the food. He seemed to find me greatly amusing. "Although I suppose growing a beard would be too much, what with the tactile grid against your cheeks."

Squeaker was wide awake and staring.

"It's complicated," I said to Stokes.

"I'm sure it is."

I had hoped to discuss with Stokes a strategy to retake the ship but I saw Rasta was pointing the gun in my direction.

"So you see the thing you were looking for?"

"Just a sec."

I took a couple of steps toward Squeaker and the Cap'n then stopped. Rasta edgy behind me; before me Squeaker glared and I could sense hatred as naked and pure as his admiration had once been. At least no smell of gangrene. Cap'n was recovering.

"Guess it's not down here after all."

Gun still at ready, Rasta followed me back up.

We shared some more hits, joint an ember-glow in the failing light, then he said, "You better get a few hours' sleep. Shotwell's gonna need you about o'one hundred."

SOME THINK SPACE IS A STIMULANT, THE CRYSTAL METH OF THE space time continuum, the cocaine of the continent. And they're right insofar as all these substances can set your thoughts to galloping and rein them in with brutal force. But they're wrong when it comes to sleep; a snort of dust can leave you counting sheep to a million, while spaceflushed you'll be dreaming happy 10 minutes after retiring.

So there was no surprise that I slept four hours, waking rested. A little odd that the spacecrash was so gentle: faintest nausea and a bit of inner hollow. That could have been the pot, softening the edges, but was probably my resolve.

I was going to win back the ship today, or at least disable it.

Midnight breakfast and then Rasta brought me to the bridge.

Silver Lady was there. So was Face-arm. He sat holding an AK-47 and the little face was beet-red on his arm.

"You don't trust me?" I said to him.

Space makes some people talkative but not Face-arm; he started playing silently with the rifle's safety.

"You'll get to earn your trust today," the Silver Lady said. The console displayed a contour map; the ship rode between two line-dense whorls, probably mountains in the Wasatch range. "We need you to guide us through some storms to the Great Salt Lake."

"No problem," I said, all confidence and treachery.

"That's what I'm counting on." She pulled the dogle out of its storage cradle on the console. "Now zip yourself back up so we can get the response generators calibrated."

The head part of the suit unzips to two flaps that ride upon your shoulders. The flaps zip back together by drawing your finger with the slightest pressure from the back of your neck, around the meridian line of your head, then down your nose to chin. It zips by virtue of a series of smartech locks far too small to see.

When I'd finished, the Silver Lady plugged in the dogle.

Whiff of mirror, sound of sweet, and the ship and I were one. We had crested another pass. There was a trailing wind of gale force, odd this far squeezeward and opposite the direction you would expect near Salt Lake. It was strong enough that its occasional shears bent my fingers uncomfortably. It would be a good wind to ride once I had control.

And as long as it lasted, it would charge the batteries, which were seriously depleted: my lungs tight and straining.

Activating the forewheel, I heard the Silver Lady say from inside me, less a voice than thinking. *Test it.*

I turned my head too hard to the right and my shoulder brushed against a steep hillside before I could correct. Boulders thumped against my back. *Oops*, I said.

Bad plan to disable the ship with Face-arm hovering over my ported body.

Be careful. Remonstrative, not suspicious. I nudged my head left then right, felt potholes in the ruined road. *Try the masts.*

I gave what I thought was a slight twist to one arm; the wind pulled the sails in their new position so hard it was painful to my back and shoulders. I reversed the twist and felt relief. When I tested the other arm, there was more control and little pain. The foremast and mainmast had been calibrated.

We tested the mizzen and aftmost masts, my legs; then the sails, my toes and fingers. While testing the last I zoomed out. Few weather drones this far squeezeward so the nighttime picture painted was a rough integration of infrared sat imagery with projections based on daytime weather. The ship a dark minnow in a gray land and beyond the Wasatch Mountains the Great Salt Lake hidden beneath a stormcloud big as Delaware and vicious as a rabid dog.

Taste of moonlight and they yanked me out.

"HOW LONG UNTIL THE STORM?" THE SILVER LADY ASKED ME.

"I'm guessing three hours." I stood shivering. We were alone on the bridge and I wished suddenly that she would hold me so I could warm. Wishings too shameful to relate queued up behind the first one so to forestall them I said, "Never seen anything like it out here in the squeeze."

"Don't you see? It's not the squeeze, not anymore."

"Dumping space has changed everything."

"It has."

I panicked for a second. Had I been sarcastic? It wouldn't do to show my hand this early. But her eyes like liquid amber seemed to hold no misgivings as she pulled a capillary infuser from her waist-pack. "Your dose for today. Use it wisely."

Her fingers touched mine as she handed it to me and I felt a stirring in my crotch.

**Some think
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meth of the
space-time
continuum.
And they're
right, insofar as all
these substances
can set
your
thoughts to
galloping.**

I didn't know if my lechery derived from my decision to betray her or the visceral exuberance you get sometimes moving into a region of expanded space.

AFTER TWO HOURS OF BROKEN SLEEP, I WAS NAVIGATING AGAIN.

O'five hundred and we were switchbacking down the far side of the pass. I was spacecrashed further, nauseated and suboptimal thought-wise. Any road smaller than a six-lane highway is built for cars, not ships, and this one maxed out at four. The straight sections fine but at the Us I had to slow or even stop, back up and jockey the ship around. Fully alert I could stop and reverse with sails but I was dull and the winds complex enough that I struck the rear sails and used the foresails and the engines to maneuver. Too much to think of otherwise, and your fingers are more nimble than your toes.

And while my resolve remained I was too cloudy-brained to fix upon a plan.

"Why so slow, dude?" Rasta was on the bridge while Face-arm and the Lady rested.

Don't want to rip the masts off.

You keep firing the engines they won't have enough charge to make it downgradient from the Lake.

Fine, I almost replied, but at least had the presence of mind to exercise restraint. If we couldn't go downgradient we wouldn't be able to escape the pirates either.

Sudden pinpoint warmth closeby to Rasta.

What's hot?

You mean my weed? Want a puff?

Not while driving, I said, but I knew what I had to do.

At the next straightaway I raised the mizzen and aftmost masts then brought down my right forearm, careful as I could. Shipwise meaning the mast telescoping closed. Once closed, the motor signals not relayed so I could move my hand without moving mast or sails. I reached below and felt a strut on the navigation bed where I'd placed a capillary infuser.

Dude, what are you doing?

It's a tool, I said.

Gotcha.

We were men of like minds.

It was only as I dosed that things went wrong. I unsealed the suit at my throat just far enough to slip the infuser beneath the grid. As I found the carotid a starboard wind hit us. Attending to the infuser, and with only three masts out of four, I compensated poorly. We veered portward and I felt it painful in my ribs as the hull scraped naked granite. For a full 10 seconds, sparks showering and metal whining, we rode against rock. All the while me chinning rightward to no effect at all.

Then the dose hit and I knew the open flap at my throat had compromised the signals to the forewheel.

I zipped shut and corrected our course.

What the fuck happened there?

Me: Saving you some fuel, dude.

I WAS BRILLIANCE AND EFFICIENCY, FOUR-MASTED

and full-rigged, like a swimmer of Olympic caliber negotiating a maze in shifting cross-current conditions. GPSed and weather-satted, heat-seeing and pressure-sensing, I made adjustments with the precision of surgeons and the aptness of seers. Half an hour of hairpin curves made with the slightest decelerations possible and we were in Salt Lake City, or its remains.

Mormon temple there but fatter. Near the rubble of a residence smoke from a cook fire driven horizontal in the wind.

The squeeze had collapsed the interchange at I-15, though neat and sandwich-like, upper level flat against the surface one. Some of the support pillars still erect and tickling my belly as I transitioned north-bound onto the interstate.

The batteries were approaching the two-thirds charge.

I'd figured out a plan.

Ahead of us a stormfreak bulked red and gray in dawn's first light.

THE PLAN, TO WIT: TAKE THE BLUEBEARDS TO THEIR DELIVERY place. (Their intent was, after all, commendable and if I could get them there that would maximize their faith in me.) Then once they'd delivered the cargo and we were off again I would act.

When they were on deck I would lift them with my sails and put them overboard.

If I used my foresails it would hurt them no more than a caress.

Only if I were still under guard might there be violence.

But as morning approached the two escort ships had set off southward, and I thought this augured well for me.

BEFORE THE CATAclysm, THE GREAT SALT LAKE WAS THE largest landlocked body of salt water in the Western Hemisphere. The squeeze changed lots of things, from the paths of rivers to the generosity of rainclouds, leaving (among a myriad other effects) the Salt Lake at 20 percent its previous size.

Maybe not *great* but enough water that you'd expect to see some sign of it. And I *could*, radar-wise or infrared, sense the water left behind, but the visual spectrum gave report of a stormfreak cloud black as bitumen obscuring a saline bay some 10 klicks distant; with closer by, the salt-encrusted plain where the water used to be either curtained off by rainsqualls, or perversely glaring white where spears of sunlight pierced the morning gloom.

Gale force winds were carrying us still westward with the batteries nearly charged. Which was bizarre unless the SLA had indeed stockpiled enough space to reverse the very slope of the gradient, at least in this location.

How much further? I asked the Silver Lady.

She was alone with me on the bridge. My hearing had a pre-scient quality; I understood her meaning a fraction of a second before she spoke.

About seven, eight klicks. There's a hill.

The hill was not registered on my topographic map but I could sense it plainly. *We'll be in the stormfreak. Shouldn't we wait for conditions to change?*

I knew what she would say:

Kurtz, this storm never moves.

YOU GET A STATIONARY STORM WHEREVER YOU HAVE A SPACE source. In the high places of the Rockies, along the Continental Divide and the big peaks where the Company stations collect cargo, there are constant upslopes that bring wind and rain and sometimes snow almost every afternoon. But those storms tend to gentleness.

This storm was low altitude and violent.

Waterspirals topped with St. Elmo's fire, class one funnels that were pillars of salt, fat raindrops whipped thumping against the ship-side. The mizzen mast hit twice by lightning (warm tingle in my calf) by the time we'd reached the hill.

I sensed a type-two funnel, big and mean, some four klicks to the north.

There's a dock I want you to berth at, the Silver Lady said.

Cement thing against the hill?

Yeah. Back us up.

I steered us portward intending to describe a U and at the apex of the U a wind surge struck us flankwise so hard and unexpected that we might have tipped over had the starboard rearwheel not extended to compensate.

Your rush wearing off?

Wind's tricky.

Right.

I was able to reverse and dock us without incident, but at a cost: I felt for the first time a stiffness in my shoulders. My *shoulders*, not the masts. A sudden distinction between self and ship signals fatigue. Or spacecrash.

Then glare of song, scent of heavy, and me facedown in the bed.

"Get up," the Silver Lady said, "and get unsuited. We need you to help deliver the cargo."

I'd had no foreknowledge she would tell me this.

SHE LEFT THE BRIDGE AND I UNZIPPED MY HANDS AND HEAD BUT left the suit on otherwise. Partly because I feared my treachery was suspected and hoped that worn on me the suit would have value in a bargaining situation. Partly because the fatigue in my limbs and digits made the zipping motion painful.

Cursing I pulled my uniform on over the suit.

I pushed the hand parts of the suit beneath the sleeves of the uniform and the head beneath its collar. Precautions unnecessary, as it developed, for the bluebeards brought out the sandtuxes from storage: parkas resistant to wet or cold or wind-tossed gravel, and intelligent to boot, camouflaged exteriors adapting gecko-like to match the coloring of environments. White on alkalai, hence the name; and gloved and hooded.

They went to dirty gray as we emerged on deck.

The sky was stormfreak dark but the wind blew curtains of salt that burned my eyes and clogged my nose and collected slushlike in the grillwork of the deck. There were goggles in the pocket of the sandtux and I strapped them on.

Holding the rail I groped sternward, the pitted concrete dock level with my knees. On the dock one of the bluebeards drove a crane the hand mechanism of which was bigger than a man. The hand swung in the wind as if beckoning. Another sandtuxed figure whom I took by her proportions to be the Silver Lady stood on the dock, directing the progress of the crane.

All sails had been struck, and the mizzen and aftmost masts had been lowered, telescoped into the deck, to provide the crane safe access to the aft hold.

Beyond the ship the dock projected tongue-like from the open gate of a windowless cement building, probably a hangar, and which itself abutted the hill. The building big enough to hold the ship yet a safe margin between the stern and gate. As if we might lose our welcome and be shut out at any time.

The hill was bare and weirdly regular like it had been drawn by a child.

I climbed up on the dock and was almost knocked down by the upslope wind. Hunched to grip the railing, I went to the Silver Lady.

"What you want me to do?"

The crane had been swung to a point above the open aft hold, and the hand though lowered swung pendulous. I have seen men killed by smaller mechanisms. The Silver Lady waited for the hand to come to rest then signaled the crane driver to lower it. Then she turned to me. "Hurry over to the station. They'll show you what to do."

"They?"

"The huskies."

"Of course." Any sarcastic edge leveled by the wind. "There's a class two funnel not many klicks off."

"That's why you've got to hurry."

I started around her but she put her arm on my shoulder. A loose strand of white hair blew from the face of her parka. "And Kurtz, don't screw anything up."

I sensed wisdom but not omniscience. I saluted her.

Other side of the crane, Face-arm and Rasta were loading cargo canisters on a rack carried by a forklift. The rack could hold six canisters and they were fastening the fifth. Neither man acknowledged me as I passed by.

The snub seemed to accelerate the spacecrash and once in the hangar I felt my gut afire and the certain imminence of doom.

"Salute!"

"Who was it?"

Voices so low the cement resonated beneath my feet.

There were two of them, both naked, and they had dosed themselves into well-proportioned giants. Neither goitered necks nor acromegalic heads nor long genitals you could tie around your legs but good-looking bodies scaled upward by a factor of three. Movement's hard at that size, though, and judging by their pallor and the number of canisters strewn about them they hadn't strayed from the hangar for a good while.

They looked like Roman statues at a keg party. One male, the other female, sitting on overturned file cabinets. I figured them for huskies.

"I'm here to help with the delivery," I said.

"*Skool!*" shouted the female. She waved a tether attached to a canister placed between them. "Come here!"

I clambered down from the dock and joined them in their quarters. Even sitting they towered above me and I saw the floor above them had been torn out to accommodate them should they ever stand again.

"Who was it?" the male said. His eyes did not focus on me.

"To your health!" The female pointed the tether at me. "Come closer!"

I stared at the tether. "Sure."

As I stooped down by the canister, the male touched my face. With fingers long as my foot he squeezed my cheeks and pinched the skin of my neck and traced the contours of my jaw and temple. I submitted patiently. I thought it would earn me a dose.

"He had the veins of a hero but the capillaries of a coward. His platelets were like rubies in the castle of a king who spurned his queen and kept many mistresses. His hemoglobin preferred the gassy thrill of expansion to the necessary bond with oxygen."

"Space isn't a gas," I said.

Maybe the wrong thing to say, because the female husky, who'd dosed while the male had been nonsensical, passed the tether to him instead of me. Then set into a lecture. "No gas, *verdad*, but the *presence of dimensionality*, which when increased *reduces* both the speed of light and the electrical constant. And *that*, the reduction in the constant, causes the saline solution in which space is collected to vaporize as the water molecules push apart. Thus the *appearance* of a gas." She waved the tether at me. "But how often do we make our judgments based on appearances and not the core realities?"

I figured then that not only were they not going to let me dose but they were privy to my secrets. "Why don't you tell me what I'm supposed to do."

"Pepper showed you what to do."

There were two of them, both naked, and they had dosed themselves into well-proportioned giants. Good-looking bodies scaled upward by a factor of three.

"Cheers!" The female dosed herself again. "Pepper, you have a helper!"

Where she'd touched the infuser her throat was just the faintest pink.

PEPPER WAS NO STATUE. GUY ABOUT 18 OF NORMAL SIZE SAVE for his arms, which above the elbows were thick as footballs and hefty enough below. I couldn't tell if it was dosage or work-related muscle mass for he wore a long-sleeved T-shirt with his name and the numeral 0 printed on back. Hair prematurely white with even less pigment than the Lady's.

"You'll tap the cans," he said without greeting or preamble.

He led me to the far end of the hangar. Here the dock ramped down to a storage station larger than any I'd ever seen. Three levels of pipes with a score at least of receiving tubes per level, and each tube shut by means of a black metal iris. The tubes like the eyes of lizards staring down malevolent and knowing.

Because of the eyes I tried to give no thought to my plans.

Rasta came right behind us, driving the forklift down the ramp, setting the fully loaded rack down then retrieving an empty rack and driving up the ramp. He did not hold a joint.

"We'll unstrap 'em," Pepper said.

The motion of the canisters was constrained by three chains looped haphazardly through the bars of the rack. At least I could discern little regularity. But then I was attempting as I unlaced the chain to ignore the rapt attention of the metal irises.

"You're not much use, are you?" said Pepper, who had done two chains on his own and finished the third one for me.

"I need a dose," I said.

"Not here you don't."

I watched slackjawed then as Pepper pulled one canister out, and carried it sideways by handles at its ends. He set it into the gurney in front of the endmost tube. An operation handled usually by a robot or two strong men.

Darkness at the hangar's mouth and hail pelleting cement: The stormfreak was close.

Below each cannister was a lever and Pepper showed me how to pedal it to move the gurney so the cannister would engage the tap tube. How fast you pedaled controlled the rate of decantation. He pointed at the pressure gauge on the tube. "The needle has to be in the black, so don't pedal too fast. *Black*, not red. Got it?"

"Yeah." I wasn't expecting automation but this setup was pure 19th century.

He went for a second canister and I took over pedaling. Too fast was not a problem: It was hard work just to keep the needle midrange in the black. Though a decanting tap burst correctly might break my skin and allow space to follow.

The sandtux hot enough to shrink my skin.

"Faster," Pepper said, setting a canister into the next gurney.

I obliged and finished the canister soon after. Pepper started me on the second canister and as I pumped it occurred to me that the swollen hill a few feet distant represented not just a quantity of stolen Company property but the largest reservoir of dosage yet accumulated by man. A thought not exciting but terrifying, for space unconstrained can bring on a personal cataclysm even quicker than the squeeze. Take Position Mary's example.

A rupture in the earth and concrete could expand me bigger than the huskies.

Big enough that the hangar would fit me for a tomb.

But the stormfreak might get us first. The entire crane shook in the wind, and the bow superstructures were obscured by sheets of rain. "I saw a class two funnel," I told Pepper.

"Just keep pumping." He set a canister into the third gurney. "A class three wouldn't hurt this building."

Despite my fatigue, which was considerable, and the spacecrash, which on evidence of my growing sense of claustrophobia was deep into the third stage, I pedaled diligently. The needle higher in the

black but still a safe margin between it and the red. I finished the canister and started on the next and while pedaling removed the sandtux. Dressing down did little to assuage the claustrophobia but left me cooler.

My goggles were steamed so I pushed them up onto my forehead.

I thought to take my shirt off but remembered the GPS suit on below.

Someone asked me something.

"What?"

Pepper was ferrying the fourth canister and the two great huskies were sharing their tether and there was no one else in the hangar to speak to me. I finished the third canister and started the fourth.

Again a question.

I thought it must be the white-haired guy come to visit me again. Although I could not see him I sensed his stare. I wished the Silver Lady would come to comfort me, and almost simultaneous with that wish was its fulfillment. A sandtuxed figure hurrying in our direction down the dock, suit geckooed ash-gray: easy to see against the black clouds that enveloped now even the crane.

Pepper setting down the fifth can shot me a look and I kept pumping. But watching less the gauge than the approaching figure who I saw was not the Lady after all. Rasta, instead. Add sunken-hearted to my list of maladies.

"Why are you helping these guys?"

I saw the speaker now. Encased in the concrete as if to confirm that all I dread will happen. But the concrete like glass around his head and the hair not silver but dark. Darker than mine.

"Why are you wasting cargo on these criminals?"

It was my brother.

Before I could answer him, Rasta pulled me away, shouting in my ear, "Dude, we need your help outside!"

THE STORMFREAK HAD DESCENDED. WIND STRONG ENOUGH TO sink sand into your eyeballs so I pulled down the goggles. I'd left the sandtux in the hangar but saw the immediacy of the bluebeard's problem would not allow me time to retrieve it. Three canisters on the forklift but two others rolling on the dock and a third fallen to the outside of the dock. The Silver Lady directed the bluebeard whose attempt to grab the fallen canister seemed doomed for the cranehand described now not just arcs but figure eights. Face-arm and the fourth bluebeard were chaining in the canisters already placed.

The cranehand struck the dock.

"Come on, dude."

Rasta and I went to the farthest canister, which had rolled a ways the other side of the forklift and the crane. I proposed that we roll it back. "Shit, no, we're carrying! Got to protect the magnets!" Rasta pointed at the containment units affixed to the canister's side. They already looked pretty bunged up but I took one side and helped him lift.

Maybe 10 feet then the agony in my shoulders got unbearable and I had to set my end down. I leaned on my knees and panted and thought how easy this would be if they just would let me dose.

"Come on," Rasta said, irritable with good reason: a class-one funnel was not one kilometer distant, salty-white where it was grounded then darkening to the inky black ceiling on which it fed.

We carried the canister the last 20 feet, me fretting less about the funnel than the appearance of my brother. Dreams hold more fascination than even danger and that may be the only worthy argument against dosing. As we hefted with Face-arm's help the canister onto the forklift I saw my knuckles were bleeding. Hail-wounds or scrapes against the canister. I didn't know.

"Shit!" This from Face-arm. I thought he meant the funnel that was at the edge of the hill, but then saw he was looking at the door to the hangar which was being lowered. We all turned to the Silver Lady for guidance. After a moment, she motioned us to continue, for it was evident that the funnel was dissipating as it climbed the hill.

The other canister had rolled toward the dock. It was probably 15 feet from the forklift.

Rasta and I were about to lift it when the accident happened.

It was a demonstration of pure skill, seeing the hand at last raise the fallen canister. It was a display of nature's whimsy for the surge of wind to hit us just as the turning arm of the crane reached its maximum angular momentum. Both Rasta and I were blown over and falling we heard a *whoomf* like that of a mortar being shot. Looking up I saw the crane had fallen, its tractor itself tipped over, and the cranehand had brought the canister it held down hammerlike upon the canister we'd almost lifted. The side of the canister touching the dock bulged obscenely and the dock itself was cracked and rippled around the canister.

There were tiny leaks like bullet holes in the bulged place of the can.

"Stay the hell away!" Rasta said.

I touched my hand to a leak.

I was in a vast stone amphitheater under a night sky bright with stars.

"What will you do when you *do* see gray?" asked the Silver Lady.

She sat to my left, and was looking through binoculars at the stage, which was round and empty save for a basket. "Who else gets to suffer so you can take your dosing to its next level?"

I saw the thing on stage was actually a crib and that a toddler was climbing out of it. People clapped. The Silver Lady tried to pass me the binoculars. I couldn't take them. My right hand and forearm were wrapped in a wool scarf that itched my skin.

"You could have helped me if you weren't so self-absorbed," said Position Mary. She rested her swollen head on one hand and took the binocs from the Silver Lady with the other. Her eyes were too far apart so she looked only one eye at a time. "Although you'd probably have just got me addicted worse."

She passed the binocs to Rasta who was sitting the next row down. He held a lit joint between his pinky and ring finger while he looked through the binocs. Onstage the tot grew older, childsize now. "Space is a *tool*, chicks. Cut the dude some slack."

The child grew to pubescence. Getting pubic hair rated some applause. I tried scratching my arm but the scarf was on too tight.

The binocs were passed to the person the other side of Mary. Squeaker. He watched intently and missed nothing as the adolescent grew into an adult. Someday Squeaker would make a fine Security Chief. "I can't believe you lied, Sir. I can't believe you betrayed the Cap'n and the ship."

The only way to relieve the itching would be to remove the scarf so I started unwrapping it. Onstage the guy making it to his thirties maybe; hard to tell since from this distance I couldn't make out his face.

"It wasn't a betrayal," the Silver Lady said. "It was a sacrifice for a higher good. It was something more than a tax write-off for the Company."

The guy getting the middle-aged pear shape as muscles weaken and the waist goes buttery. The itch intolerable but the scarf very long: I was still unwrapping.

"But at least we're doing something real! At least we're not dumping cargo where it does nobody except some addicts any good at all!" A familiar voice from behind me. Dark-haired guy probably 20 looking a lot like my brother. Although he held the binoculars he seemed shy of using them. Or maybe more interested in venting on me. "If you weren't rushing all the time maybe you'd see things clearly! If you weren't rushing all the time maybe you wouldn't be worshipping that woman! Maybe you'd remember the oaths you took!"

The guy was not my brother.

Fishhook in right eyebrow and green golden-spoked irises.

He was me, just younger.

Onstage the man was bent and hollow-chested but his hair was still dark brown.

The crowd was going wild.

"And maybe I'd still be alive," Position Mary said.

I finished with the scarf.

"THE DUMB FUCK"

I was on my back, supine in the melting hail, and Rasta was examining my hand, which had expanded two-fold but unevenly,

fleshy parts big while bones stayed small, with the veins between wrist and knuckle the largest and some bursting bloody through the skin. Space cauterizes wounds effectively so there could be no danger of serious hemorrhaging, but I was troubled that I was watching the bluebeards attend me as if my viewpoint was set some feet from the dock.

"Should we leech him?"

A leech is a device that vents space, reverses a minimum of cellular damage, and causes a lot of pain. I went into my body and sat up. "I can leech myself."

"Then get back on the boat," the Silver Lady said. "And let us do our work."

Rasta helped me up. "Looks like you got yourself a million-dollar wound."

I climbed over the rail with exaggerated slowness, for despite the injury I was riding the spacerush, and I wanted to give them no clue that I was about to end their mission.

IT'S SAID THE MEN OF THE HIGHEST STATIONS, GENERALS AND CEOs, use space to good effect in the heat of battle or the drama of the boardroom. While I lay no claim to winning wars I can tell you that the dosage from my accident put the steps for saving the ship before me bright and true as highway signboards. My dream had given me reasons for my acts and the acts themselves followed smoothly and efficient. I went into the rear hatch of the bridge deck, bolted it shut, and disabled its electronic lock. Then I followed the corridor into the bridge, bolting shut its hatch. There in the bridge I undressed, feeling for only the first time pain as I pulled my expanded right hand through the sleeve. The pain momentarily placed me visionwise above the ship and I saw the cranehand had unloosed its canister and the bluebeards were canting the crane tower up as if the redistribution of weight would right the tipped tractor. The vision not hallucinatory but matter-of-fact as if I'd engaged the ship's telemetry undongled.

But surely I'd need to dangle to power and guide the ship. I sealed the GPS suit around my head and left hand then tried without luck to suit my right hand.

The navigation bed is portable but heavy; I dragged it close to the console, pain flashing pictures of the pirates still working on the crane. Then like them hoping gravity would do my work for me I set the tip of the dangle into its slot and lay down on the rack.

As the *Beneficence* rocked in the wind, the dangle fell to the floor.

A new exigency faced without hesitation. I got up then took the dangle, which seemed undamaged, and pushed it all the way into the slot.

Smell of blunt, sound of green, and then though my tactile senses were coordinated with the ship I could zoom my eyesight where I pleased. So I went visionwise into the bridge and saw myself leaning against the navigation console, arms outspread as if to bless it. As the ship is rigid and has no points of articulation along its beam I could not stand nor straighten myself. But I had full control of masts and hence of my limbs so I crawled, backwards and laboriously, onto the rack.

A perfect operation save for the fact that even outside the bed my physical motions had activated the engines and telescoped the two rear masts upward from its hold. The dosage had boosted the controls as well as the telemetry. Useful for me except that three of the bluebeards had realized my plans and jumped onto the deck.

I flexed my thighs and the maximum acceleration achieved threw one overboard. A fourth bluebeard ran to the end of the dock and his sandtux went to white in a sunlight patch as he watched me speed away.

The other two were less tractable. One at the rear hatch and the other at the forehatch and both within moments putting their respective doors with plastique explosives. Then me all grace and elegance as I raised the mizzen mast and spread its crossjack sail around the man at the rear whom I knew was Rasta and lifting him as he thrashed and struggled and dropping him gently overboard. Almost at a standstill and lowering the ship's keel as far as practical.

And me trying to duplicate the effort at the forehatch, with the mainmast, but my damaged right hand instead of lifting knocking the bluebeard into the rail then hard overboard and me hoping (for hope is yet another form of dream) that the bluebeard was Face-arm but the slender body and the loose white hair giving every indication it wasn't.

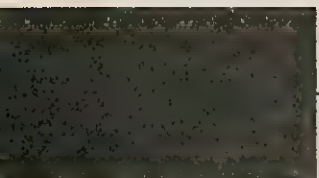
Her sandtux geckoed perfect white against the lakebed.

I did not have the courage to view her infrared.

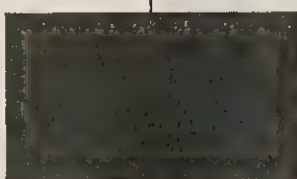
I HAVE A DESK JOB NOW, AND A MEDAL I JOKE THAT I saved the *Beneficence* single-handedly; surgeons repaired the thumb and index finger, but had to amputate the other three. On my desk a photo of me getting chummy with the CEO and Cap'n.

Squeaker has not returned my calls and the times I've seen him here in Boulder he has not even favored me with a salute.

It's not a bad life, meetings, boxed lunches, the chance to see cad-cam models of the latest ship designs and offer my opinions as regards armaments and full-spectrum 'scopes. But ease and comfort can be wearing in their own way so there are times I take an afternoon off to hike on the Flatirons, steep peaks adjoining Boulder that announce the Rockies with conviction, and on a spruce-scented summit I dose a little and look southeast toward Texas, where the Company holds back the squeeze at a handsome profit, then westward where collecting stations circle the four-click peaks like studied bracelets below upthrust fists. And sometimes there when my heart aches the most, I dose more than is prudent; and though I seem to hear the Silver Lady's voice I do not know if she is forgiving me for what I did, or assuring me she has survived, or if indeed it's not she who speaks, but just the wind, following a gradient, and passing blindly through the pines. □



Her head
was enlarged
proportionately,
with none of
the distortions—the
bulging forehead,
the skin broken by
splintered
bone—that
I'd seen
before..



SHADES OF GREEN

Continued from page 34

The Inquisitor's mouth quirked slightly. "That doesn't make what they did legal," he said, mildly, "but we'll deal with that later. If they can lead us to the people-smugglers, we may be able to help them ... Where are the other refugees?"

Neither woman answered, and the Inquisitor sighed. "I know you weren't the only one to leave the planet...."

"No," said Kimi, while Mai tried not to wince. "But the others aren't.... They're not here. You can look if you want, but you won't find them."

Mai bowed her head slightly, hoping to hide her look of confusion. What was Kimi trying to do? Whose side was she on? "We're the only *human* beings left on this planet," said Kimi, flatly. The Inquisitor stared at her, then at his aide, who nodded.

"Check your records," Kimi continued. "This is the only base on the planet, and the air outside isn't safe to breathe without filter masks. How many refugees do you think escaped?"

The Inquisitor looked sour. "What about Chevalier? Where's she?"

"Long gone," said Kimi. "Weeks ago. She took the last load of refugees with her."

"Shit," muttered the aide. The Inquisitor turned to him, but he shrugged. "The gimmick says she's telling the truth, but that's—" He paused, listening to the voice in his headphones. "Duggan says his scans show no other humans within a kilometer; the heat and the rain and the CO₂ make it impossible to be sure of any readings past that range. He's located what looks like a small rover, but it's a long way away, near the horizon. Small and Lechler report that they've found a food converter, but not much food. Five chickens and a pig, though."

One of the soldiers laughed. "Shall we arrest *them*, sir? I could do with some fresh—" The Inquisitor glared at him, and the soldier fell silent.

Kimi cleared her throat. "I'm a cadet," she said, quietly, "and I know a little law. You can arrest me, or any other refugee, you can arrest Chevalier if you can find her, and take us back to Ararat for questioning ... but unless you have proof that any of the scientists here have committed crimes *on Ararat*, they're outside your jurisdiction." She smiled thinly. "I think that goes for animals, too."

The Inquisitor turned pink, then bared his teeth in a snarl. "*Knowing* the law isn't the same as *being* the law." He took a deep breath. "If the others are gone, why're *you* still here?"

"I didn't want to go with them," she said. "I want to go home."

The aide nodded, but the Inquisitor ignored him. "Well, you're lucky we left one tube empty," he growled. "And you're not quite right about the law. If anyone here has committed any crime here *against* an Ararati...."

Kimi laughed. "Nobody here has harmed me, Lieutenant, or even tried," she said. "On the contrary; they've treated me very well. Or are you accusing her of corrupting me? I only turned 14 a few days ago, but I assure you, I'm my own person, I make my own decisions, I know my own mind—and I'd like to get home and see my family. Or are you going to make me stay here, and keep the jumpship here, while you search the entire planet?"

One of the soldiers snickered, and the Inquisitor turned around, but their expressions were unreadable through their tinted visors. "OK," he said, heavily. "I want this place searched, *thoroughly*; if you find *anything* that contradicts her story, tell me. Otherwise, we lift off in an hour."

IT WAS STILL RAINING WHEN CHEVALIER landed, but everyone was waiting at the edge of the field anyway. The pilot had radioed as soon as her ship had jumped into the system, saying that there was a larger ship following her—a Lanumoanan liner, with enough room for all the refugees. The 11 who were to go with Chevalier, a few hours ahead of the others, were chosen by a lottery; most of the refugees didn't even bother lining up for their numbers, though they did line up to say goodbye to the pilot. The cheer that greeted her when she walked down the ramp drowned out the calls of the cavernmouths.

"I guess I won't be back for a while," she said, half an hour later, as she prepared to leave. "Not with the Inquisition gunning for me. I'll make sure someone else drops in to see if you need anything, and lets you know if anyone suffers any aftereffects from the injections."

"Thanks," said Tad. "The place is going to seem really empty, when everyone's gone."

"Make the most of the privacy," advised Chevalier. "Are you going to reverse the treatment, too?" she asked, watching Viviana and Beth dispensing antibiotics over by the tents.

"When we've got the farm back up to speed," replied Tad. "I feel pretty sluggish, but I don't know whether that's psychosomatic, a side effect, or just hunger. Thanks for bringing food, by the way."

Chevalier nodded, and looked over at Mai, who was dancing in the mud with Erik. "How much longer are you going to stay here?" she asked.

"I don't know. It depends on what we decide is best for Kimi."

"Kimi?"

"The baby. We decided to call her Kimi." He sighed. "We'll teach her what we can here, but I'd hate her to have to stay in this swamp if she wants to go somewhere else. Of course, if she *decides* to stay, or to come back, that's her choice. Not everyone wants to spend half their lives between planets, like you."

Chevalier smiled. "No, they don't. What about you?"

Tad stared at the green vista, and the half-green people that surrounded him. "I think it's about time I put down some roots," he said. □

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GET YOUR SERVICE

the reluctant

BOOK

*The books were
alive. That's
more than
could be said of
their owners.*

There followed hard upon the death of Master Biobiblioplexist Vincent Holbrook the pressing question of how best to dispose of his extensive library. None of the unsentimental heirs to the moldering Holbrook estate cared to assume the daily demands of such a large collection of books. The motley assortment of assignees—among them various second cousins, great-nephews, and assorted ex-brothers-in-law left over from the multiple marriages of Holbrook's two serially promiscuous sisters, Marlys and Taffy—were all a decidedly illiterate lot. No one was inclined to assume responsibility for even a limited number of the approximately five hundred volumes left forlorn at librarian Holbrook's passing, for the selfish heirs simply had no use for such arcane objects. (Complicating matters, the Catalogue had gone missing upon Holbrook's demise, so that an exact tally of the library's contents was lacking.)

A lanky, happily seedy and reclusive fellow well into his second century (although fated by a lurking cerebral aneurysm undiagnosed by his glitchy domestic homeobox never to embark upon a third), given to dressing in fusty nonregenerative clothing prone to showcasing every gravy stain and every dribble of the pungent

By Paul Di Filippo : Illustration by Chris Mars

NURSE GWENDOLYN A. RAYNES JIMMIES THE
CRANIAL CIRCUIT FLAP TO TEND TO THE
WOUND OF MOTOR
BALL CHAMPION
AND PART TIME
HORSE THIEF
#34, DEAN TESH



sengchow constantly lumped into his cheek, Holbrook had been devoted to his library, sparing no expense on housing and maintaining his collection. His own living conditions at the cavernous, crumbling mansion named Rueulroald betrayed commensurate economies. But Holbrook's bookbarn was assuredly first class, the envy of many of his fellow MBs.

Occasional *sotto voce* grumbles from his uncaring heirs during his lifetime about how the old man was wasting his money—actually, for all practical purposes, *their* money—on such a self-indulgent hobby failed to disturb the equanimity or enthusiasm of the doddering bibliophile. He managed to ignore even the ravings of one particularly vindictive niece who, in an act of psychic displacement transparent to everyone but herself, speculated loudly that Holbrook actually derived pleasure from the frustration of his nearest and dearest. Why else would he wantonly continue to pour their dwindling inheritance into the acquisition of new volumes and the multiplication of his existing ones?

The why was simple, had anyone cared to inquire: Holbrook fancied himself a scholar, and boasted a scholar's unswerving dedication to the pursuit of knowledge above all else. And in truth, out of his well-stocked, heavily permuted, and continually refreshed library had flowed some original contributions in a number of fields: stellar intel-

had chosen perversely to address as "The Venerable Bede"), Stallkamp clutched to his quilled chest, as if suspicious of imminent theft, a battered leather case whose handle had long gone missing.

"Allow me to conduct you to the mysteries," said The Venerable Bede.

Stallkamp barked, "What! What's that? I'll have no truck with mysteries of any stripe!"

The Venerable Bede opened a panel under its left armpit and reset a switch. "Excuse me, I meant the mistresses."

"Very well then. Lead on."

Lame leg evoking a regular plastic knocking, the factotum conducted the human visitor through many a drafty, dusty hall hung with animated tapestries whose ancient routines ran only spastically now, and through many a polycarbon-cobwebbed chamber where only the glowing LED eyes of artificial spiders illuminated their way. In one vast high-ceilinged ballroom, sentry bats squeaked from on high, alert for intrusions by any of the myriad types of rogue colonizing insects—escapees from hobbyist workbenches—that populated the dense forests around the manse, those groves themselves engineered so long ago that the names of their designers no longer erupted in spontaneous stipples from bark or leaf.

Finally the pair reached the center of the house, a warm, well-lit kitchen. The heady fragrance of brewing Estruvial Spice tea

Wide hazel eyes glimmered, ears twitched, and blunt chisel teeth flashed as

ligence; gravitokarmic mechanics; intractability parsing; asteroidal archaeology; quantum erotogenics; string collecting; creative teratogenesis; and even those neglected twin domains, once upon a time so creatively mined, fiction and poetry. Holbrook had seen a number of successes, receiving invitations from various ahuman judging intelligences to port his findings out of his books and into the relevant cybernetic audiovisual databeds that formed the real repositories of useful information in Holbrook's era.

But deriving all these entertaining and educational results from his books was an arduous and demanding task, admitting of little non-bookish relaxation or convivial pursuits even with fellow MBs. His hobby was conducive even to monomania, perhaps, and Holbrook had paid the ultimate price for his interests.

And soon now, so would his books.

MB Kratchko Stallkamp resembled a constitutionally ill-tempered, mangy crane recently denied its dinner. Stalky legs encased in yellow pipestem pantaloons; a roundish torso fluffed out with a weskin of synthetic quills fashionable over 50 years ago; hunched winglike shoulders and perpetually scrunched-down head resulting in ears nearly on a level with his Order of the Bookbinders epaulets; and a beaky nose and hard eyes intent on the main chance of spearing something. The wispy hair partially concealing his scabby scalp anomalously evoked the downy plumage of a chick. As if his avian semblance were not offputting enough, antique eyeglasses retrofitted with intelligent actilenses lent Stallkamp the impossible air of a goggling time-traveler from the Reductionist Millennia.

Ushered from the wintry collonaded front porch into the cold corridors of Rueulroald by a gimpy Turing-five factotum (one of the few functioning servants left on the estate, an antique whom Holbrook

filled the room with a synthetic allure. In one corner of the kitchen a cot with rumpled covers indicated as plainly as speech that here had Holbrook slept, as well as taken his rudimentary meals, ceding the rest of the house to moth and decay.

"The mysteries," announced The Venerable Bede, then departed.

Seated at a big wooden table with a warped and scarred top were Marlys and Taffy Holbrook. The sisters both exhibited the high-gloss perfections of the extensively reconfigured elite, although each possessed her own individual style. Marlys had had her scalp hair eliminated and facial features minimized: eyes, nose, nostrils, ears, and mouth reduced to the barest pinpoint of functionality across a head bare as an egg. The result sketched the nearly empty china face of a doll whose maker had run out of materials or ingenuity or both. Taffy boasted a leonine head of tawny hair framing a bestial living mask. The end of her leathery snout gleamed wetly, her whiskers vibrating with each breath. Marlys wore a pinafore and flouncy skirt, Taffy an elastic suit striped from its scooped neck to ankles.

"MB Stallkamp," purred Taffy. "Please, take a seat."

Marlys's high voice emerged as if from a paper-bellows-and-bamboo-reed mechanism of no large size. "Yes. Join us in some tea."

Stallkamp waved away both offers brusquely. "No time for socializing. I'm only interested in the books."

The ladies sought to preserve their dignity and decorum. "Of course," Taffy said. "We recognize your devotion to learning, and we're so grateful that you wish to purchase the library as a whole. It surely would have pleased our dear Vincent to know his collection would end up in such fine hands."

"That's why we favored your tender over all the others," piped Marlys.

Stallkamp denied the tactics of the sisters. "Don't pretend. I know through my contacts that you have had no other propositions, save from the knackers offering you pennies on the dollar. None of my peers wanted a library without a Catalogue, a record of all the permutations and stud lines. Too much work by half getting the whole affair sorted. You can't rely on the books themselves for the information, of course. Except in text mode, they're stubborn prevaricators, every one of them."

"Oh, true."

"So true. Nasty things, books."

"But I'm different. Once I get them home, I intend to overwrite them all anyway, and to hell with their current contents. Your foolish brother's holdings never supplemented mine in any case. He wasted his time on all sorts of nonsense. Gravitokarmic mechanics, indeed! No, I'm paying you as if the books were all blank, straight from the publishers—with a sizable discount for heavy usage, of course—and that's the best deal you'll get. There's no point in jollyng me up to try to extort a few more dollars out of me. So you might as well conduct me to the library right now."

The sisters stood up resignedly. Taffy pointed to a large door set in one wall beside the large stasis cube that served as the icebox for comestibles. "The bookbarn is right through there, MB Stallkamp. Vincent never wanted to be more than a few steps from his precious books. Do you need us to accompany you?"

"Not at all. The books will be jittery enough without the presence of two nonlibrarians. Let me just check my equipment one last time, though."

Stallkamp deposited his flat case on the tabletop and cracked it open. Racked inside were several perfusion hypos—prefilled with varicolored semiotic liquids in their graduated cartridges—and a wicked-looking pronged device like a tuning fork fused to a pistol grip.

Marlys pointed to the weaponish thing. "What is that? I don't believe Vincent ever had one."

"It's a librarian's fine-assessor." Stallkamp took up the bifurcate gun and closed his case. "The bookbarn door is locked, I assume."

Taffy removed a key from her décolletage. "Here's all you need."

own well-ordered social life. But since the death of their beloved librarian, MB Holbrook, these good days had been few and far between. True, not a single requisition had obtruded on their private time, but this accidental vacation was not without attendant drawbacks. First had come the diminished heat and light in the bookbarn, leaving the books to shiver and huddle in the unchanged hay of their darkened carrels. Next they had felt the sting of hunger, as their meals began to arrive from the automated synthesizers with increasing infrequency and diminished quality. (The books were not privy to the many arguments among Holbrook's heirs about how best to minimize estate expenditures during the breakup of the property, nor were their votes solicited.) Finally, the books suffered from the black, bleak uncertainty concerning their future.

The bookbarn bulked four stories high, with over a hundred carrels per floor. Central to each level was a reading room forbidden to the books save when called there by the librarian. Serving as their social focus instead was the unallocated floor space around the meal synthesizers, and to a lesser extent, the toilets. Often, the older books, leaders of the community, would call meetings in front of the food dispensers. With some squeezing—not at all disagreeable to the small, hairy books, especially given the chilly conditions obtaining lately in the barn—all the books could accommodate themselves in the open space.

On this day just such a meeting had been called—by old Incunabula, leader of the first-floor.

Eager to see his beloved Vellum once more, Canto was among the first to arrive.

the books greeted each other. They spoke,
of course, in pure human tongue.

Stallkamp strode impatiently to the door, but was brought up short by a shrill invocation of his name from Marlys. He turned around. "Yes?"

"There's a way you could gain Vincent's library without expending any money, sir. Each of us is in the market for a new husband. Surely one or even both of us might appeal to a learned gentleman such as yourself."

From between his overarching shoulder blades, Stallkamp favored each of the women with a long piercing look before saying, "Sorry, but no. You two are of an exquisitely high-toned breed incompatible with my humble station."

Inserting the still-warm key into the lock of the bookbarn door, Stallkamp quickly let himself in, leaving the Holbrook sisters simpering from the flattery whose irony had escaped them.

Canto had not asked to be born a book, any more than he had chosen the ratios of his mixed genotype and his consequent motley appearance. But having received such an assignment from fate (in the case of the subservient Canto and his fellow books, of course, fate wore an all-too-human guise), he generally tried to make the best of things. Being a book—at least in this collection—did not hold the terrors associated with many other chimerical employments: toxin tester, vacuum worker, seabed miner. Boredom, lack of freedom, the rigors of new textual creation and mixing—these were the worst things a book generally faced.

Some days were easier than others, naturally—days when the majority of books were left uncalled-upon and could conduct their

Generally, aside from eating and toilet errands, the books were supposed to remain permanently in their carrels until called by the librarian, and that routine still held to a large degree. But in any library of longstanding agglomeration, the books invariably became familiar with the usage patterns of their owner, and felt safe in circumspcctly venturing out among themselves, especially when the librarian was asleep. Under the current circumstances, of course, with their owner dead, no one was likely to call for any volume whatsoever, and the books felt safe in assembling during the day. Perhaps, too, they were lulled by the fact that MB Holbrook had never assessed any penalties for going misshelved.

Beneath the lousing dusty rafters of the first-floor ceiling and in front of the food chutes now assembled scores of books, pouring in from the various convergent corridors. Soon Canto was surrounded by his fellow volumes, and he had to strain onto tiptoe in search of Vellum.

All roughly three feet tall, the books evidenced their heterogenous genetic composition in every line of their furry bodies. Part squirrel, part baboon, part hare, part whistlepig, with a certain admixture of human qualities, the books sat upright on big hindquarters and lagonomorphic clawed feet, carrying their upper limbs close to their chests. Their disproportionately large heads seemed set almost directly onto their shoulders. Wide hazel eyes glimmered, ears twitched, and blunt chisel teeth flashed as the books greeted each other. They spoke, of course, in the pure human tongue.

Canto spotted Vellum's attractive dappled pelt across the convection and hustled through the musky crowd to join her.

"Hello, Vellum. Have you missed me?"

Vellum smiled prettily. "Of course I have, Canto. I won't ask you the same, because I can see right away that you have."

Canto sighed. That was romantic Vellum all over, perceptive and sensitive to a fault. A surge of melancholy passed through Canto as he wished for the hundredth time that he and Vellum embodied the

same type of text. But they didn't, and without that prerequisite, chances were they would never be allowed to mate.

The books had no diurnal libidos. Chemically suppressed, their sexual instincts were allowed to come afire only when the librarians wished to mate two books and produce a new text. And the chances that books from different fields would be brought together were minimal. What, after all, would be the point of breeding a work on neutrino construction with a volume of chaoticist poetry? Chances were that the offspring would be useless—although sometimes such wild hybrids did give rise to completely new areas of fruitful study—and in that case, the book-knackers would be summoned to dispose of the useless whelp.

These hundreds of blank books—further modified according to his special scheme—

Canto shuddered at that thought. Better never to know the bliss of conjugal union with Vellum than to bring such a hapless creature into the world.

Just as Canto was about to exchange more pleasantries with Vellum, the herd of books began to fall silent, focusing their attention toward the food dispensers. Canto took Vellum's paw and they both directed their gaze forward.

Onto a tabletop clambered with some hesitancy a grizzled, plumpish book: Incunabula. Able now to command the whole herd, supported by two assistants, Trivium and Quadrivium, Incunabula began to speak.

"Ahem, my fellow books. Thank you all for leaving your carrels to attend to my humble speech. I shan't keep you long. I only wish to say that I fully realize that since the untimely mortal passage of our dear librarian, all of us have been anxious about what the future might hold for us. Some of us might even have thought of following the Catalogue into the outer world, where only dangers and hardships await—bibliovores such as the gnoles and gnurs and zipper-nut squirrels. I caution anyone entertaining such a desperate scheme to be patient. Surely we shall all find a new home very soon. After all, our utility and value are unquestionable. Are not we books the fount of all new conjectures and theorems? Unlike the static databases, the ever-shifting texts we embody, cleverly manipulated by our librarians, are the prime source of new concepts and fresh perspectives. Even in a culture such as the current human one, which prizes stability and feels that many limits of knowledge have already been reached, new thoughts are still welcomed by many scholars and—"

"What's going on here?"

The shouted query from the rear of the herd caused every book to squeak loudly and nearly bolt for their carrels. The herd swayed, but held. Summoning all his courage, clutching Vellum's paw tighter than ever, Canto turned around to look for the source of the angry shout.

A human stood on the fringes of the herd, and he held an object Canto had never actually seen before, but only heard horror stories about.

A librarian's fine-assessor.

MB Stallkamp's library back home at his manse Brundisium consisted of a mere 90 books, housed in a smallish barn recently much extended in preparation for his anticipated acquisition. He consulted his tomes by ones and twos—perhaps by threes, at most. Dealt with in such small numbers, the books had always struck him as feeble and impotent creatures, susceptible to easy command and prone to cower under his astringent tone.

Now, faced with scores of self-motivated books, Stallkamp was forced to revise his long-held estimate of the books' tractability. This unexpected show of initiative went counter to his expectations. His gut rebelled against the massed smell of the volumes, and their ranked stares unnerved him. But realizing that he should not let any of his fear or uncertainty show, lest he lose any trace of the upper hand, he followed his first instinctive question with a bellowed demand, directed at the one book who stood out from the herd.

"You on the table! What's your UDC?"

Only among themselves did the books indulge in proper names, names which were meaningless to their librarians. To those masters, they were known by their Universal Decimal Classification, as dis-

played above their carrels.

The portly book stuttered out its code. "Theta gamma dot zero nine seven two slash five blue one—master."

Nerving himself up to a desperate pitch, Stallkamp crane-strutted his way through the books as they fell desperately away from him, squeaking, their hairy flanks brushing his calves. Coming within firing range of the book upon the table, Stallkamp halted.

"You look to be the leader of this rabble, and as such will have to be fined."

Raising his assessor and pointing it at the book, Stallkamp squeezed the trigger. The assessor emitted no visible ray or projectile. Nonetheless, the book grunted as if struck, short arms scrabbling at its chest, then collapsed. The two assistants jumped back in fright.

Stallkamp approached the fallen book, hefting one limp limb. Dead. He must have had the assessor set too high, or perhaps this book suffered from some organic defect which the assessor had magnified. Whatever the answer, the deed was done. Now to make it serve.

"Back to your carrels," shouted Stallkamp, "or you'll all get the same!"

The herd dispersed in seconds, all save the slower of the two aides, whom Stallkamp had grabbed by the loose skin at the back of its head.

"You're to come with me to the reading room."

Dragging the book by its scruff, Stallkamp attained the reading room. Here he found the lectern—a book-proportioned couch with sturdy straps—a chair for the librarian, and various oddments of the bibliobiblioplexist's trade: blank paper, syringes, a small semiotic distillery, and the like.

Stallkamp motioned the book onto the lectern and secured it in place. Then he uttered two readout commands: "Open your covers. Title and table of contents."

A look of disassociative withdrawal slid over the book's countenance as the commands triggered automatic retrieval and verbal output. "Advanced Principles of Planckian Geometry. Chapter one, methods of charting. Chapter two—"

"Stop." Stallkamp opened his handleless case and removed a perfunctory hypo. He applied its snout to the neck of the book and shot the device's measure of sophisticated erasure molecules into its veins.

Stallkamp sat down and consulted his watch. On the couch, the face of the book twitched in small spillover reactions incidental to the ongoing erasure, as dendritic delinkers did their brutal work. After approximately 10 minutes, Stallkamp addressed the book again.

"Title and table of contents."

The book opened its mouth, but seemed unable to offer anything. Stallkamp radiated pleasure. These hundreds of blank books—fur-

ther modified according to his special scheme—would certainly go all the way toward bringing his pet project to its long-sought conclusion. Then wouldn't the smugly ridiculous MB Sauvage get a nasty shock!

Stallkamp left behind his visions of triumph, and took the book offline. "Close your covers."

The command brought the book back to self-awareness and nervous apprehension of its surroundings. Stallkamp released it from the restraints and ordered it back to its carrel. The book departed, somewhat shakily. Likewise, Stallkamp swiftly made his way through the deserted corridors of the bookbarn and back into the kitchen of Rueulroald. There he found the Holbrook sisters awaiting him.

"Was everything satisfactory?" inquired Marlys eagerly.

"Absolutely. I performed a random wipe without a hitch. The books will serve my purposes well. I'll have the trundels come round in the morning. Factota will stasis-box the library and take the whole col-

breeding two books. Neural changes were reverse-transcribed into the sperm or egg cells of a book, and the brain of the offspring consequently encoded the random reshuffling between parents, offering a new launching point into uncharted information-space. (Although juvenile books took about two years to come fully online neurally.)

The books had no conscious access to the texts they held. No corpus callosum connected their isolated twin hemispheres. Their individual, private mental life took place all on one competent side of their severed brains (protected from the various text-modifying reagents by arterial filters), while the textual work went on unmonitored in the other half. A small inviolate interpretive nucleus in the textual half (several hundred thousand neurons) hooked into the book's hearing and speech circuits, responding to verbal librarian commands and handling basic operating systems functions.

But having no direct access to the contents of one half of their skulls did not mean that the books could not sense in a subliminal

would certainly go all the way toward bringing his pet project to its conclusion.

lection away. Upon receipt, I'll deliver your payment. Oh yes, there'll be a small deduction though."

Taffy asked, "What for?"

"The library has just been diminished by a single book. It seems one of the volumes became foxed beyond repair when I handled it."

A complacent satisfaction and discurious inertia reigned over Earth. Mankind had, for the most part, simply lost the desire, or perhaps even the capability, for old-fashioned creative ventures. Millennia of scientific and esthetic discoveries—held safely in instant-access databases and inexhaustibly compiled and cross-referenced by cybernetic intelligences—answered all common questions and practical inquiries, served the majority of entertainment requests, and ensured that the weight of knowledge would generally crush all initiative. Yet a few eccentric scholars still sought to explore those tattered pockets of art and science that might yet bear a few linty grains of undiscovered knowledge in their seams.

The living books were their instruments for searching, engines of knowledge creation.

Into the capacious neurons of a blank book could be loaded an entire text, many, many units of semiotic import. But simple holding of a text meant nothing, was a task better left to other, more stable media. The innate talent of the books lay in the ingenious ways their unpredictable, parallel-processing wetware could permute the initial semiotic units. Under the influence of various old-fashioned agents (chemicals, enzymes, herbs, hormones, proteins, nutrients, and drugs, administered by the librarians through a combination of recipe and guesswork), as well as through the instrument of dendritic relinkers (impossibly tiny units operating in the bloodstream according to onboard algorithms), the brains of the books would shuffle and mutate selected portions of their contents in a wild manner no artificial intelligence could duplicate. Outputting the new semiotic units resulted, nine hundred and ninety-nine times out of a thousand, in sheer gibberish. But the aleatory point-one percent of worthwhile new information led down strange and curious paths.

A final procedure, undertaken when the librarians desired to rely on the evolutionary wisdom of sexual recombination, consisted of

manner whether things were going well or not in the hidden arena. After all, the textual side of their brains lived off the shared bookish metabolism as much as did the conscious half, and various feedback loops such as the enteric system remained as grounds where the two halves could exchange wordless data.

Being wiped left a book devastated.

Canto had not felt this way since leaving his publisher. In fact, he had never really felt this way at all. In his faraway youth, some five years ago, textual blankness had been the only state he had ever known, an accepted emptiness, half his mind a wet clay tablet awaiting stylus. But after all these productive, albeit unexciting years under MB Holbrook's perusal and overwriting, Canto had become accustomed to feeling full of knowledge. He had felt useful, even proud of his unique, inaccessible contents. And now they had been stolen from him, wiped clean in the space of a few minutes.

Canto was now a palimpsest, helplessly awaiting new input on the smudged surface of his mind.

As were all his peers.

The trundles from Brundisium had arrived and disgorged their efficient factota (so harshly unlike the kindly Venerable Bede, who had often provided the books in Holbrook's library with filched snacks). The factota had floated into Rueulroald pallets bearing compressed stasis boxes, unfolded them, and boxed up the library. Suspended insensibly in the smallest possible cubic area, five hundred books were trundled off to Brundisium.

There they were unpacked one at a time, shot with delinkers, and hustled off to their new carrels almost before they were capable of staggering away. MB Stallkamp had not splurged on the annex to his bookbarn. Instead of individual stalls, tokens of respect affording some comfort and privacy, the books were dormitoried 50 to a tight room. Their hard beds lacked even any comforting UDC numbers, since the books were now unclassifiably blank. In the eyes of their master, they were generically identical.

For the first few days after their acquisition, when not eating or eliminating, the books merely stayed abed, nursing their violated neural interiors with occasional groans, fearful of doing anything that could earn them a touch of the fine-assessor. The death of Incunabula had proven a sharp lesson in the rigors of their new existence. Whispered conversations in the depth of night had been their most seditious actions.

But one morning Canto could not stand the inactivity anymore. He was worried about Vellum. How was she dealing with the new conditions? Canto longed to hold her paw and exchange reassuring

words with her. So, without announcing his intentions to any of his fellows, he slipped to the edge of his fifth-level bunk, climbed cautiously down the ladder (his big feet nearly becoming entangled in the rungs), and surveyed his fellow chamber mates.

Canto's eye fell on Papyrus and Parchment, Breviary, Octavo, and Folio, Watermark and Septaugint, Microfiche and Athenaeum, among many others whom he had less familiarity with, since they had once resided on floors in the Holbrook library where Canto had not often ventured. He saw no original books from Master Stallkamp's library. Those holdings seemed relegated to other stacks. But most important, his chamber contained no Vellum.

Cautiously, Canto poked his head out into the newly constructed yet still somehow dankly dismal, sweat-walled corridor of the book-barn. He knew the location of the adjacent dormitory from trips to the food chutes. His heart pounding violently (a wise librarian kept his books cosseted and as serene as possible, hoping to limit the amount of endocrinal emotional flux on the blood-washed text), Canto hopped next door.

The books in the second dormitory stirred with uneasy and timorous curiosity when Canto crept in. As soon as he got nose-deep into

savored now a piquant contradiction. Acquiring Holbrook's library, cheap though the purchase had been, had drained his liquid assets, ensuring future material pain and roadblocks in the smooth maintenance of Brundisium. But the sacrifice would be worth it, since now imminent success in his chosen field was practically guaranteed.

Stallkamp was no dilettante like Holbrook, wasting his energies across a dozen trivial fields. He specialized in a single discipline. Remarkably, this crabbed, self-centered fellow whose horizon seemed to extend no farther than the end of his nose regularly contemplated vistas of Godlike proportions, for Stallkamp was an haruspical cosmochartist. Like some extinct astrologer, he read the stars in order to prophesize. But Stallkamp and his ilk proceeded on a more scientific basis.

The universe had structure: So much was undeniable. Agglomerations of stars formed galaxies. Neighboring galaxies in turn formed clusters. Clusters of galaxies arranged themselves into

Canto had not been asked to be born a book, any more than he had chosen

the room, he smelled Vellum. Within a second or two, he was by her side where she lay in a low-level niche.

"Oh, Vell, are you all right?"

Vellum opened her limpid eyes and essayed a brave smile. "Nothing to complain about that we aren't all sharing, dear. Just this knackered sense of uselessness."

Canto started. It wasn't like Vellum to swear. Her cursing revealed to Canto how deeply she had been affected by their common tragedy. A sudden geyser of anger and rage fountained up in Canto's furry bosom.

"Let's escape, Vell. We'll run away, just the two of us."

Vellum squeezed Canto's paw with both of hers. "Being boxed up, we didn't get to see anything of our new surroundings, but I'm sure our new master lives someplace as remote as Master Holbrook did. All the librarians do. Outside is probably miles and miles of forest just teeming with bibliovores. We wouldn't last a minute out there. No, we'd better just resign ourselves to serving out our lives here. Once we get some new texts in us, I'm sure we'll all feel better. Life will go on, Canto. Perhaps you and I will even share a partial UDC. Then maybe we can breed. Wouldn't you like that?"

Canto tried to envision this tolerable future Vellum sketched, but the vision wavered and refused to cohere. Nonetheless, he tried to match his level of resignation and optimism to hers.

"Of course I'd like such a wonderful thing to happen. But I just don't see—"

Vellum laid a clawed finger across his lips. "Shush, Canto. Have faith. Now, go back to your carrel so you don't get either of us in trouble."

Canto and Vellum rubbed wet noses, and then Canto snuck off.

He had one foot across the lintel of his own dormitory when, like the jaws of an antique steam-shovel descending on a clod of soil, a roving security factotum gripped his shoulder with a steely pinch.

In his lugubrious lucubatory, MB Kratchko Stallkamp sat gloating in his big actisoothe chair behind his impressive desk, looking like a ratty kingfisher plucked from its lakeside perch and unexpectedly plonked down atop a throne. Stallkamp

superclusters. And so on, upward along several additional levels of scale, a self-sustaining mode of organization that rendered the three-dimensional cosmos into something resembling a highly recomplicated sponge or a block of Swiss cheese tunneled by an infinite number of drunken mice. Haruspical cosmochartists sought to unravel the plenum's patterning, its filaments and tracteries. With this knowledge, they hoped to prove certain weighty tenets of post-Tiplerian eschatology.

For several decades Stallkamp had been charting a region around the North Ecliptic Pole Supercluster, 1.3 billion light years from Earth. Modeling pointillistic data from a variety of exotic Oort-Cloud-based sensors (aged and frequently failing, but who nowadays had the initiative to replace them?) directly onto the pattern-sensitive brains of his books, he had made slow but steady progress, tweaking and boosting millions and millions of dendritic weightings. Always in front of him was the goal of having his results officially accepted by the cybernetic intelligences that governed the integrity of humanity's databases. Would they accept his proposed name for the shaped darkness: the "Stallkamp Void"? He could see immortality beckoning alluringly.

Then, a few months ago, Stallkamp had learned of a rival. MB Humility Sauvage was working in the same field, attempting to chart the identical region of the cosmos! It was like finding a stranger in Brundisium's gardens pissing vigorously onto his prize shatterpetal rose! Thus began a deadly race—a race Stallkamp now was sure to win, thanks to an admittedly chancey strategy.

Unable to restrain his gleeful sense of superiority any longer, Stallkamp leaned forward and intellitickled the sensitive screen of his helloworld. Within seconds appeared the repulsive face of MB Sauvage, home in her airy manse called Larkrise. Stallkamp likened her aged visage in his mind to a dustmop-shrouded pumpkin inexpertly carved.

Without preamble, Stallkamp launched a direct strike. "You might as well give up your pitiful efforts, Sauvage. In a month or so, long before you could possibly squeeze out any minging results, I'll have the Stallkamp Void completely mapped."

Undaunted, Sauvage sneered. "I know all about your outrageous purchase—practically a theft!—of poor Vincent's books. But bluffing won't work. You still own only some six hundred books. I own

nearly that many myself, and I know that it would take the synergy of at least a thousand to achieve what we're after at one swoop, instead of incrementally."

"I beg to correct you, MB Sauvage. I now own almost 1,200 books."

"How so?" Sauvage blanched, as the meaning of the new number struck home. "Surely you don't mean—"

"Yes, I do mean precisely that which you are afraid to declaim. I intend to relink the neurons in the personal hemispheres of all my books, thus effectively doubling my library's processing capacity."

"But the books were designed with autonomy and character for a specific purpose. As thinking individuals, they maintain themselves in a stable fashion, freeing the librarian from expensive homeostatic hookups. Plus their sentience adds unqualifiable virtues to their results. What you're proposing would be worse than ripping the tooled leather covers off antique books just to boil up more pulp!"

Stallkamp waved aside these quibbles. "I have plenty of factota to minister to the minimum bodily needs of my books once they go mindless. And I've never subscribed to your 'ghost in the machine' theories. All I want is the raw neurons, not some imaginary 'spirit'!"

"But you'll shorten their lives to practically nothing!"

"What does that matter, as long as I get results? More trade for the knackers! And afterward, I'll start fresh with new books. I'm sure I could find a patron who'd appreciate a supercluster named after himself, once I've proved I can do it."

"I don't think so. Every carrel is already occupied."

Canto became impatient. "So what are you saying?"

Index Medicus stopped swiping at his fur and stared intently at his cellmate. "Everything points toward it. We're going to be double-wiped. All of us. The master needs the half of our brains we call our own."

The concept was so grotesquely repugnant to Canto that he had a hard time wrapping his mind around it. Not so much for himself did he balk at the harsh reality of human treachery, the overturning of all biblioplectic tradition, as for the sakes of his friends, and one in particular. The sweet essence of Vellum blotted out of existence, as if she had never been? Such an atrocity beggared description.

"I was caught trying to escape," Index Medicus said resignedly. "I think the master intends to double-wipe me first as a final test."

Canto said nothing, but merely sat back on his haunches.

Eventless hours dragged by, the books nearly jumping out of their hides at every clink and rattle from beyond their door, until at last a solenoid clicked in the windowless prison door.

The master filled the portal, blocking any escape. Then he was inside with the books and the door was shut again, lock engaging with a mean snick.

"Two of you! The factota have been diligent but uncommunicative. Well, unfortunately I brought only the single shot of this marvelous, utilitarian oblivion. Who'll go first? Who wants the honor of being the leader into the future of my exaltation? Don't clamor now!

the ratios of his mixed genotype or his consequent motley appearance.

Reduced to meaningless threats, Sauvage said, "You'll be reviled by all your fellow librarians, Stallkamp!"

MB Kratchko Stallkamp laughed. "Then I'll certainly know I did the right thing!" With a sharp stroke of his thumbnail, he severed the connection.

The gripless satchel lay on the desk before him. From within, the librarian took a specially marked hypo containing the omnipotent delinkers that would bypass the publisher's filters and reach the vulnerable personal half of a book's brain. Then, yellow legs scissoring, Stallkamp left his study. Still in the battered case, the fine-assessor sat ignored, inconsequential to the glory-bathed sight of its owner.

The small, dry but dirty cell into which the factotum deposited the miserable Canto boasted a woe-faced, scraggly occupant already. Once Canto regained his breath and calmed himself, introductions were exchanged between the two books.

"Canto. I don't have a UDC number anymore."

"Index Medicus. Me neither. Not that it much mattered, as all of us in this library used to share practically the same string before. But now we don't even have that. The master downloaded all of our texts into temporary storage, then gave us wipes. Our elder, Dar al-Kutub, suspects that the one huge text we were redacting has been broken up into smaller bits, so that you new volumes can help work on it."

"That makes sense, I suppose."

"It would, except for one thing. Dar heard the master ordering a factotum to load the new hypos in sequence."

"So?"

Index Medicus began nervously to groom the greasy patch behind one ear. "He arranged for twice as many shots as there should have been."

"More books are coming?"

What, no eager takers? Well, precedence goes to the volume I've owned the longest then."

The master grabbed Index Medicus by his scruff and raised the hypo. The pitiful book let out a single squeal and went limp.

Canto's powerful legs propelled him fully atop the master's shoulders. Unbalanced, the human tottered forward, ramming his head into the stony wall of the cell. The hypo dropped, but was cushioned from breakage by Index Medicus's supine body. The librarian jerked Canto off his back, spun half around, then slumped to a sitting position on the floor like a man sinking wearily into a bath.

By the time the master had focused his attention enough to rub his sore skull, Canto gripped the hypo. The master's eyes widened, and his voice cracked.

"Give that over, you damnable pulpbrain!"

Canto hung his head contritely, and extended the hypo on his palm. The master smiled cruelly and grew easy.

Once as close as possible, Canto lunged forward and jabbed the master in the neck with the hypo's snout.

The librarian instantly stiffened as billions of tiny monomaniacal machines flooded his cortex. As the delinkers swiftly unwove the engrams of a lifetime, the master's body went through an alarming and unseemly display of spasticity. Retreating to one corner of the cell, the two books huddled together until the violent exhibition of misapplied technology reached a quiet terminus. The dose had always been intended to leave intact the lower brainstem capabilities of the books—autonomic control of respiration and heartbeat and so forth—so the master continued to live, but only as a mindless, bruised doll.

Index Medicus regarded Canto with a blend of awe and fear. "What happens now? Are we trapped in here? Will we starve? Will some other librarian come to save us?"

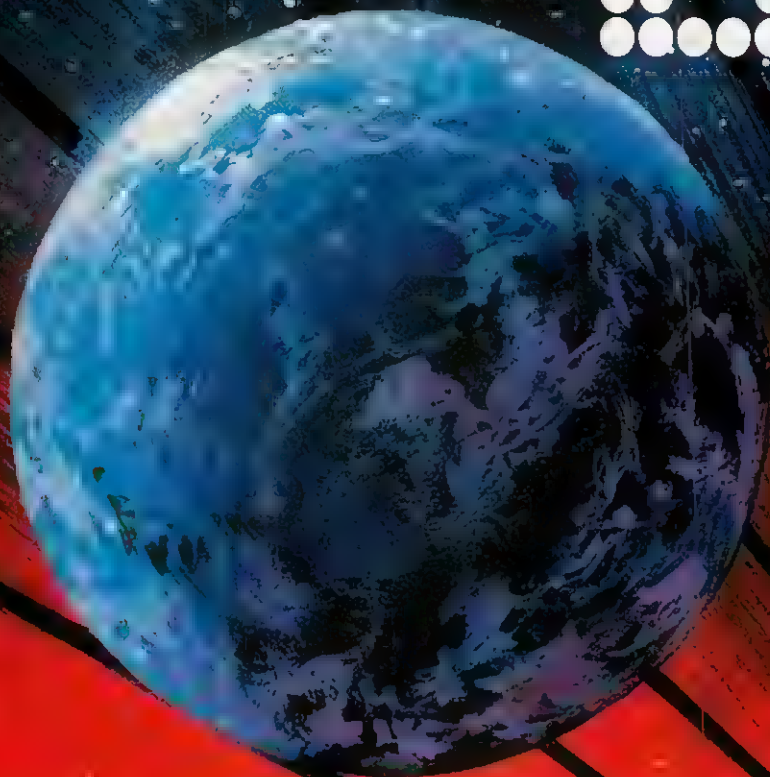
"I don't know," answered Canto.

"But I'm scared!"

"Be brave," Canto counseled. "After all, a book must show its spine." □

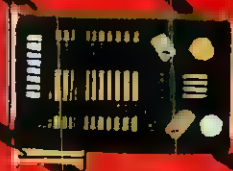
By Patrick
Illustration

*There's a
-knock, w*



February 7, 2002

Project team met today for the first time. Impressed by Doctor Aardwight—a gruff man, but excellent with his equations. Other team members will require strong leadership/motivation. Outlined project goals, discussed overviews.



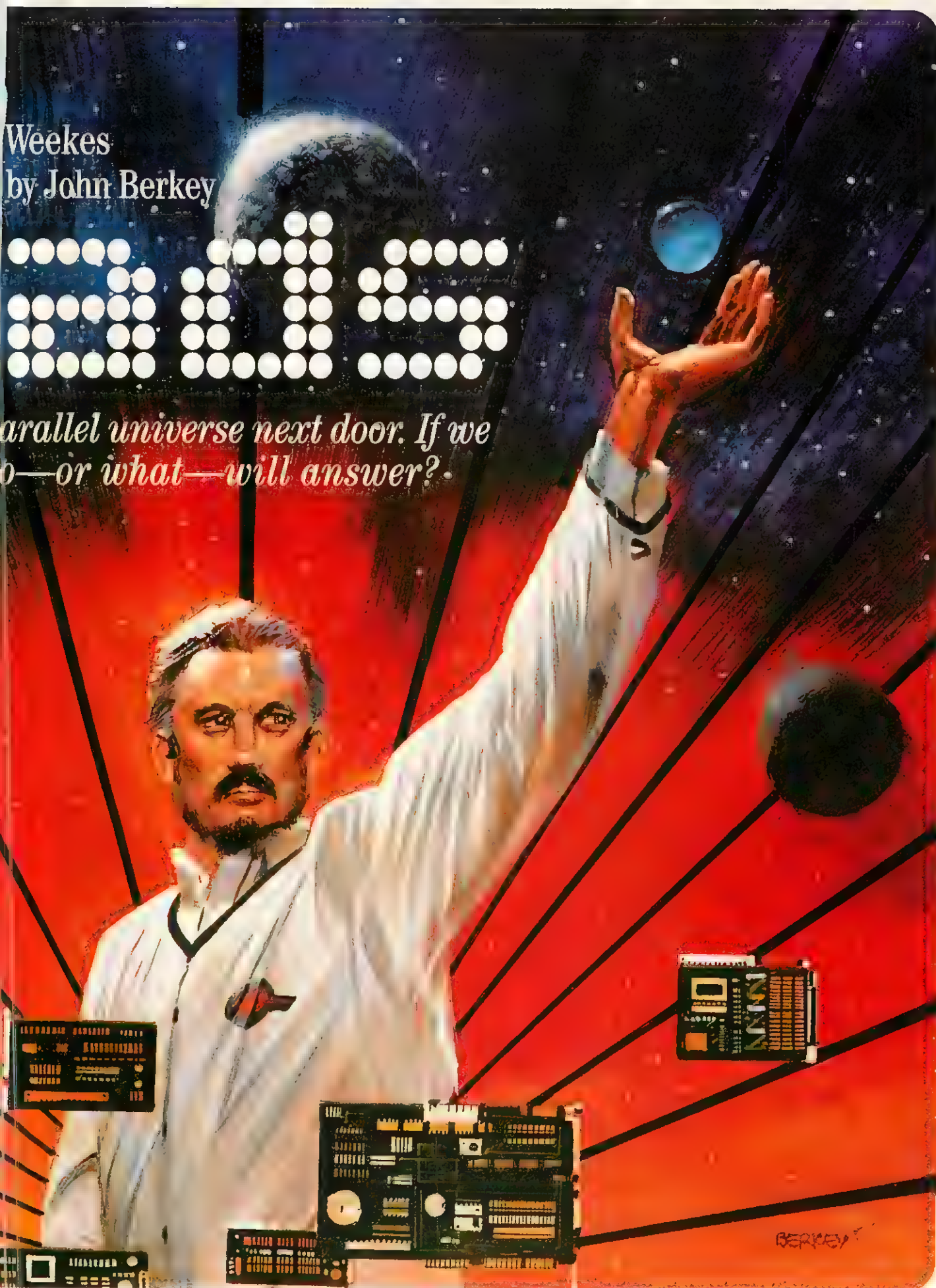
February 19, 2002

First trial run. Unsuccessful. Was too optimistic in time frame—equipment/energy requirements small, as expected, but absolute coordinates difficult to achieve. In order to swap matter with parallel universes, we need to know the exact location of each particle; attempts to “fudge” data with parameters in place of coordinates resulted in negative matter transfer. Aardwight has been acting

Weekes
by John Berkey

THE

parallel universe next door. If we
do—or what—will answer?



quite smug—he believes his equations to be the key to this whole affair. Other team members unmotivated. Alster reads too much—Ericson worries about long-term geological impact from the transfer process.

March 9, 2002

Test particle (neutron) coordinates achieved in planar scale; third dimension proving problematic. Aardwright insists fourth dimension (chronological) will be accounted for in his equations. Hypothesis that fifth-dimensional coordinate indicates which of the infinite parallel universes particle resides in met with agreement. Lab technician Andrews fired for misuse of equipment.

March 17, 2002

I got it. Aardwright's equations overlooked subatomic movement in more than one plane. He is furious but putting on a civil appearance. We now have three-dimensional coordinates for our test particle. The assistants have named it "Newt." I suppose they need their diversions. Morale is uninspired as it is.

March 23, 2002

Second and third tests inconclusive. "Newt" disappeared in each instance, but no particle replaced it, as the fifth-dimensional coordinate swapping would have produced. Aardwright believes the swap was successful, but that the equivalent coordinates in the appropriate par-

allel universe are in a vacuum. He advocates swapping with a universe closer in 5-D coordinates to our own—farther coordinate systems may have no Earth or Sun in said universe. He's bluffing—5-D coordinates have no proven corollary to similarities between parallel universes. Still, trying other coordinates cannot hurt, and it will make him happy. He becomes silent and withdrawn when not taken seriously.

April 25, 2002

EB has life—more, it has its own transfer project! At 8:52 AM transfer was initiated from the parallel universe into our lab. Various team members stunned by this occurrence. Aardwright and Ericson ran an extensive computer diagnostic to be sure. At 8:55 AM another transfer was initiated from EB, and again at 8:58.

April 27, 2002

Spent most of yesterday explaining to the President and his staff that "Aliens from Earth Beta" cannot attack us. Beyond our current inability to transfer anything larger than a subatomic particle is the fact that transfer would certainly kill any living thing to make an attempt. Am told I will have a government observer from this point. Lovely. Transfers from EB continue, greater in frequency. Morale high. Gave nonessential personnel Friday off.

May 1, 2002

Observer Banks arrived yesterday and spent all day checking the computer for possible problems. He assumes that as a university project we are riddled with idealistic incompetence.

Spent most of yesterday President and his staff Earth Beta can

allel universe are in a vacuum. He advocates swapping with a universe closer in 5-D coordinates to our own—farther coordinate systems may have no Earth or Sun in said universe. He's bluffing—5-D coordinates have no proven corollary to similarities between parallel universes. Still, trying other coordinates cannot hurt, and it will make him happy. He becomes silent and withdrawn when not taken seriously.

March 30, 2002

No progress. Aardwright off on vacation—I called his equations mathematical hand-waving, and he stormed out. No great loss—his work was done, and his sole contribution was to say, "Keep trying," after every failed attempt.

April 4, 2002

Success! Newt replaced by a positron. Particle was destroyed shortly after arrival—stasis field for Newt involved electron bombardment. Nevertheless, we have proved the existence of parallel universes. Aardwright returning on late flight.

April 17, 2002

We believe we have found our equivalent Earth, named Earth Beta for differentiation. After 15 transfers of subatomic material and a close coordinate reading of particle nature and velocity upon arrival, I have convinced assistant Ericson, with his geology background, to approximate the planet and its location. EB is in orbit a negligible distance closer to Sol, and currently in orbit 0.056 subjective seconds "ahead" of our own planet. Its closer proximity to Sol will result in it steadily outdistancing our Earth over time. Aardwright is reworking

There is a bright side to this, however. While Banks occupied himself with diagnostics, Aardwright informed me that he believes the transfers to be a message. Their frequency and repetition he believes to be an encoded coordinate set and time for transfer, in process of being sent by a flash system—a simple binary code. EB-side testers appear to have compensated for the drift—either they can modify the 3-D coordinates (unlikely) or they have a movable test station. Aardwright could be reading too much into it, but the possibility of a coordinate set rather than points—thus allowing transfer of a larger particle—is indeed tantalizing. By his estimations coordinate transfer should be complete sometime tomorrow. He is more civil now that he feels useful again.

May 2, 2002

The coordinates plug in perfectly. Either the EBans are attempting to initiate a concurrent transfer to allow swapping of a carbon atom, or we are the victims of the first interdimensional practical joke. Transfer time is set for tomorrow. Banks is unaware of the plan.

May 3, 2002

Transfer successful. Our carbon swapped for an array of neutrons of equivalent mass. Another "message" transfer coming. Banks is furious, had to be physically restrained by assistants. Aardwright and I shared a rare moment of agreement in laughing at him. Aardwright offered to buy me a drink.

The new message may be beyond our capabilities—the coordinate set encompasses almost a cubic millimeter. The EBans must recognize this—the concurrent transfer date is three weeks away, giving

us time to upgrade our computers. If we can do this thing, nothing is beyond our power. With us and the EBans working together, the size of transferred matter will be limited only by the power of our computers. Must convince Banks to argue for more funding.

May 10, 2002

Banks has come around—he finally understands the potential benefits. The computers are coming. Aardwright seems strangely anxious, but the others are ecstatic. Someone made a T-shirt with a humorous message about the EBans, and everyone has one now. Am glad my leadership has created such an atmosphere of camaraderie. Have not had to release anyone in weeks.

May 18, 2002

Finally discovered what was bothering Aardwright. He is laboring under the same paranoia as the government, that the EBans may take advantage of us. Insists on talking about one-sided transfers of macromatter. Attempts to reason with him unsuccessful. At least it keeps him busy.

May 24, 2002

Transfer achieved. It is incredible—the EBans' idea for a coordinate set gets around the necessity for knowing the coordinate set of each particle to be transferred by using a locus defined by points constant in relation to the galactic center. It is like telling the computer,

equations disprove it. Has been trying variations of the micromatter transfers on the old equipment in the back room.

The package we received contained more writing—apparently mathematical equations, improvements on Aardwright's work, and shortcuts to allow greater mass transfer without increased computation. It also contained something of equal or possibly even greater value—a tiny glass bead.

June 2, 2002

The bead has turned out not to be actual glass, but a composite alloy none of us has seen before. Its molecular structure is of a complexity we cannot replicate at this time. Ericson, who in addition to geology and physics, has some knowledge of material science, professes it beyond his ability to understand. Preliminary reports indicate it to be stronger than any metal alloy in existence, and a room-temperature superconductor to boot. The scientific benefit of this gift is enormous. Banks has been completely won over, and wants to open trade negotiations for advanced technology as soon as we have established real communication.

June 19, 2002

The EBans are officially our friends. Today in a diplomatic transfer arranged by both parties, we sent over a container about the size of a shoebox. It contained a signed message from the President, in English with a rough translation into EBan, a chocolate bar, a small

aaa bbbbbb ccc to the
that there from
not attack us.

"everything in this box," save that the box is a cube of imaginary lines. The computing power is intense—our machine is already being upgraded—but it worked.

The small chip of silicon we received, when placed under a microscope, has what appears to be writing upon it, several paragraphs in different writing systems. The top resembles ancient Sumerian, the second a derivative of Latin, and the third—and most modern, as Alster, who has some linguistic training, guessed—some mixture of Cyrillic and Greek. He is calling it "the new Rosetta Stone," and hopes, by piecing together the Latin and Sumerian, to understand what is possibly the vernacular of the EBans.

We will be able to communicate with another world.

Morale very high. Went out for drinks with colleagues. They even seem to like me.

May 30, 2002

Another transfer, this time of a cubic centimeter. With the President's blessing we have sent our own package back to Earth Beta as well. Alster put together something like the Rosetta Stone we received, and then threw in a short message of greeting and goodwill in both English and what he hoped to be a crude approximation of EBan. He promises to be literate within two weeks. Observer Banks insisted on viewing the package before its transfer, and then on having it explained to him in great detail.

Aardwright is not often in the main room these days. He spends most of the time playing with his equations. I think he is jealous that the EBans are teaching what he wanted to discover on his own. Also insists one-sided macromatter transfer is possible, though his own

container of some expensive wine, and a baseball cap with a picture of two Earths, separate but overlapping, with the Sun shining above and between them. In return they sent us an awkwardly worded message of "equal not-aggressive friend existence," and a number of loops made out of a bright, silk-like cloth with a twining pattern woven in. A picture attached indicated that they were to be worn like the Hawaiian flower necklaces. The President took several of them as diplomatic trophies, but all of us in the lab received one. They and the humorous T-shirts are now the unofficial lab uniform.

Banks believes they are technological savants but social savages. Thinks we should keep trading trinkets. At the bar last night, talked about all of us getting rich.

July 3, 2002

Learning more about the EBans while improving upon our technology. They have more knowledge of physics than we do—or at least this area. Their application chemistry appears crude, though—both their "shoebox" and the photograph inside remarkably primitive. Beyond the silk cloth, no discernible cultural information at this time. Banks's theory uncouth but possible. They are requesting any geological data we can compile on our own Earth; Earth Beta is seismically unstable (closer orbit?) and they want to see our mineral/tectonic charts for comparison. Also, largest test to date: a swap of one hundred cubic meters of seawater. If successful, we will be able to swap high-level technology of any effective size.

Personal note: Aardwright becoming more and more unstable. Does not approve of seawater swap. Has been lifting other researchers' data for "private study" of one-sided transfers. Am

considering giving him a vacation. Work can now be done competently by Ericson or Jacobs (or myself).

Saw in news tonight that "glass bead" given by EBans will increase computer efficiency, build cleaner factories, and make a safer automobile. President was beaming—and wearing silk necklace. We now have a decided edge over other countries. Silk necklaces a fashion icon. Team is ecstatic. When we travel as a group, people recognize us. Am considering asking Dr. Winters out.

July 15, 2002

Seawater swap successful. One unanticipated side effect; water was filled with dead fish; not fun to clean up. (Possibly a practical joke. Indicative of primitive culture set? Banks, President think so.) Jacobs working well as new mathematical consultant. Aardwright left for "vacation" with little protest. Perhaps he saw the inevitable. Even left his silk necklace behind.

Am feeling somewhat under the weather, likely a result of prolonged stress. Hopefully no one will advocate a vacation for me.

July 18, 2002

EBan diplomatic exchange continues. President wants a kind of EBan pen-pal program; still occasionally brings up possibility of organic transfer, which I consistently state impossible. Was able to promise an exchange for more of the "glass bead" alloys, hopefully with instructions on cost-effective manufacture methods. Actually

a macromatter transfer on our own will be as large a step as our first initial neutron transfer. The equations are scarcely recognizable now as Aardwright's original work—coordinate sets and multiple dimensional allowances. Perhaps a Schrodinger's solution could make it simpler—anything inside the coordinate box a possible until moment of transfer. Coordinates would cancel down to.... What am I saying? I'm hallucinating. Time to go home.

July 21, 2002

What have we done?

Aardwright returned this morning, pale and haggard. Told me he had been to see all kinds of doctors. Discovered that cause of ailment was not sickness but a chemical agent. Hurling an EBan necklace at me; his hands were shaking. Told me he never knew they were going to kill us. Apparently some sort of slow-acting contact poison in the material.

When pressed, told me he had been working with them for months—providing physical data on our dimension, so they could initiate one-sided macromatter transfer. Betrayed us. Wanted to become their "emissary," negotiator for new technology. Said he never felt appreciated.

The EBans poisoned us, and him. Aardwright thinks they are close to being able to make the transfers alone. When he heard of their interest in geological maps, he became enraged. They're going to stripmine the planet. There was never any negotiation. It was all a ruse.

Later the president
of the team out with
the master flu.

snapped at him today; am still not feeling well, which likely explains it. Doctor has no explanation aside from a slight chemical imbalance. It appears to be something going around the office.

Have requested more of the celebratory necklaces from the EBans. The President wants all foreign dignitaries to have one. He wears his at most public appearances. It may replace the necktie as a fashion symbol.

Jacobs approached moments ago with fascinating news. The coordinate tracking system has advanced considerably with EBan support. He hypothesizes that we may soon be able to transfer macromatter without simultaneous transfer activation by the EBans—just as Aardwright predicted. Energy is obviously not a problem; it is simply a matter of tuning the coordinate grid more tightly and maintaining coordinate lock on the incoming material. The EBans will certainly be impressed, though without being able to change the 3-D coordinates, all we could do is swap items from their room at random times. Still, it would avoid the need to synchronize.

(Potential problem: One-sided transfer could encourage President and Banks's inclinations to exploit the transfer process. Simple EBan culture needs time to adjust to us. Must remember to stress long-term benefits.)

July 20, 2002

Now definitely sick. Did not want to come in to work today, but had meeting scheduled with President and Banks to discuss an oversight committee set up to have authority over the project. President canceled meeting, as it turned out, for health reasons of his own. Ironical. Banks did not show up at all. In fact, large percentage of team out with the mystery flu. This is one of the problems inherent in working with the same people in a close environment for long periods of time.

Am working late anyway. Jacobs' theory is developing. To initiate

President already incapacitated when I called. Foreign dignitaries also falling ill, according to Banks's associate. Aardwright says there is no cure. Must do something.

July 23?, 2002

The Earth is shaking. News reports multiple volcanic eruptions across world; large damage, ash clouds across high percentage of planet. Weather disruption. Earthquakes devastating cities near epicenters. Transfers probably aimed at stress areas on edges of tectonic plates.

We are hunched in the transfer chamber. Aardwright coughing. I cannot stop shivering, even as I write. Late stages of poison decay. Everyone else on the team is dead. My team—friends—gone.

Social savages. Banks is an idiot. Was an idiot.

Aardwright thinks he has the one-sided transfer ready. Hopes it will also solve the organic transfer problem. If we can transfer ourselves over, it will prove how valuable we are. They'll let us work with them ... another team....

Countdown is at 15 ... blurry. Can't hear what Aardwright is saying. Shivering. Writing this to stay conscious, will throw it out of chamber before we go.

Five ... have to cure us ... three ... two ...

July 25, 2002

It didn't work. Am alone in building. Aardwright died yesterday. So cold.

Broadcasters reading message from the EBans. A mineral-poor area in Asia has been left untouched. All survivors are to report there. In return for work, food and living supplies will be transferred to us. My mouth is too dry to laugh.

They gave us glass beads for our planet. □

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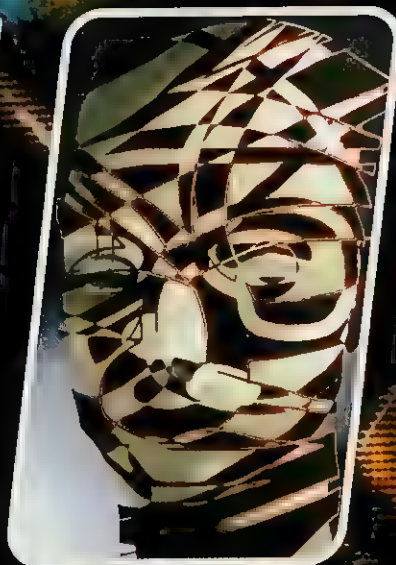
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*Digital pioneer Rick Berry
collaborates with the collective
unconscious of Science Fiction.*

SURFING THE QUANTUM SF W

BY KAREN HABER

*SPREAD: Spitfire demonstrates the
wonders of digital imaging. INSET THIS
PAGE: Reality shifts in DigiHead. INSET
OPPOSITE ABOVE: Berry's own
unusual brand of cyborg is
illustrated in Cybionette.
INSET OPPOSITE BELOW:
The cover of Wil McCarthy's
Bloom shows off Berry's
Hard SF side.*





AVE

If we're very, very lucky, the art of this new century is going to look a lot like what artist and cybermaster Rick Berry is doing right this very minute.

Berry is acknowledged as the creator of the first digital cover illustration for fiction worldwide—for the 1984 paperback edition of William Gibson's *Neuromancer*. In addition to being the *ur*-digirato of SF art, Berry is also an accomplished traditional painter and has received numerous awards and recognition for his work. He's produced hundreds of covers for books, gaming, and comics. His work has been collected in *Double Memory: Art and Collaborations*, by Berry and Phil Hale.

His film credits (with collaborators Darrel Anderson and Gene Bodio) include the 3-D CAD cyberspace climax for TriStar production's *Johnny Mnemonic*, and





BERRY'S ART PHILOSOPHY IS AS BOLD INCORPORATING BOTH THE

more than a few film fans think that his work may have influenced the look of another SF movie starring Keanu Reeves, *The Matrix*.

Berry happily accepts the credit—or blame—for being one of the founding fathers of the cyberart movement. "Yeah, what a tremendous accident," he says. "I just love it. When I'm being absolutely obnoxious—usually in bars, just before I get thrown out—I preach the gospel of digital art."

Berry says that if *Neuromancer* hadn't brought him to digital art, he would have sought it out anyway. He was ready and waiting for it. "I could see the digital thing coming—I'm one of those guys who reads *Scientific American* for fun—so I was already there, lookin' for the machine, poking around, waiting for the time, right there at the front of the line."

"When the editors at Berkley asked me to take on the *Neuromancer* challenge, I was perfectly willing to lie and say, 'Sure I can do that for you.' I just felt so deeply within myself that I was ready for it. And I didn't even have a computer! But I think I was ready with that lie because my truth was already there."

"By the way, *Neuromancer* already had a very fine cover done by Jim Warhola. But they told me, 'We know it's going to sweep the awards, etc., and we want to do something special. Something new. Computerized.' And so, of course, I said, 'if you don't know what you want, I'm perfectly willing to go out there and find it. I'll be your point man in Terra Incognita.'"

By dint of luck, bluff, and sheer nerve, Berry bulled his way into MIT's Architecture Machine Group, hooked up with a hacker named Mike Halle, and began to realize his machine dreams upon a mainframe Ramtek running Sun workstations. "My computer at home today would eat alive the one Halle and I used then, but this was back in 1984."

The rest is cyberart history.

Berry came to Science Fiction early. "Maybe it came from my father," he says. "He was a fighter pilot who was killed when I was nine. Maybe I was influenced initially by the airfields, the jets, the glory, the sky, the bizarre sort of De Chirico





AND UNUSUAL AS HIS CREATIONS, MYSTICAL AND THEORETICAL PHYSICS.



CLOCKWISE FROM UPPER LEFT: The breadth of Berry's palette can be seen in the range of styles in *Cassandra*, *Harlequin*, *TardiGrade*, *Grief Tattoo*, *Wind-Up Man*, *Silver Tongue*, *Demon*, and *Mabelline*.

landscapes of flattops and tarmacks and hangers. I think Science Fiction was sort of born into my soul, this aspiration and awareness of this frontier, a glorious thing that we could become—that we had once been.”

He also thinks that attending 11 different schools might have had something to do with it. “I began to read Science Fiction to have some sort of continuity in my life.”

Art also got its hooks into Berry at an early age. “My mother, who was and is an artist, had a lot to do with my interest in this field. I learned art wherever I could find it. And when I became aware of the growth of the underground comic book publishing scene, I took it as the sign I’d been waiting for.”

At age 17, he dropped out of high school in Colorado with his buddy (and current collaborator) Darrel Anderson, and hitched out to his first World Science Fiction Convention in Los Angeles.

“I hit the road with Darrel, and we weren’t alone. In those days midgets roamed the Earth, and I was happy to be among them.”

Once at Worldcon, the two teenagers set up a table to display their artwork and became acquainted with longtime fan and pro writer Frank M. Robinson, who bought some of their artwork.

Berry’s preference for collaboration over solo art creation stems from his experiences among the comix gypsies. “Studios were formed, dissolved, and re-formed. I learned so much—I’ve been so extraordinarily lucky to have worked with some remarkable people.”

Eventually he came to rest in Massachusetts, met and married artist Sheila Vaughan, with whom he has three children, and with Sheila and Darrel Anderson formed the collaborative art association known as BRAID. (A side note for Berry fans: Sheila Vaughan Berry was the model for the memorable image *Death/Redux*, a fact that both pleases and dismays her husband. “There are times I feel that I’ve sold her out, given her essence to the cold and heartless commercial world.” He



ABOVE: Jeela seems like nothing more than a well-done contemporary portrait, until you look a little more closely. **CENTER:** The horrific Khimera. **OPPOSITE:** Berry can also show the gentle side of things, as in Moderna.

swears that everything about the image is true, especially the subject's elegant wrought-iron legs.)

Among the various projects in vitro BRAID are a book, coauthored with Anderson, entitled *Braid: An Approach to Collaborative Mind with Art as a Tool of Evidence*, which is due out in 2001, *Grobot*, Anderson's revolutionary program for 3-D object design and creation, and quality prints of computer images. Berry is especially excited about this last development.

tially, I don't think we're as big as ideas.

"Everyone's had this experience: An idea hits you and you think you have it. But do you really? Or does it, perhaps, have you? Let's say I have this idea and I read in the paper that Bill Gibson has the same idea, dammit, and I've never even talked to him about it, so where did he get it? Well, the idea that got me got him, too.

"Take creative people and make them nodes on a wave form that we're trying to track on a chart. The wave form is the wave of the idea and it's moving through a populace and it's like I'm surfing this wave—this idea—and so is Bill, but the wave has us, not vice versa.

"Something began 15 or 20 billion years ago, and it's still going on, this one continuous creative act that we're enfolded within, and sometimes we have a sense of it. To the degree to which we are capable of having

a sense of these things it shows in our creativity, in our sensitivity to others, in our consciousness. Maybe it's the quantum physics of creativity.

"My artistic philosophy came first, but the digital stuff folded in beautifully. And, although digital offers some considerable advantages over other media in terms of indestructibility, I'm open to using all media."

Perhaps that's how Berry brings warmth, depth, and poignancy to such a cool medium. In works like *Red Prophet*, *Death/Redux*, and *The Ice Mother*, he combines his skill as a portraitist with his fearless approach to mixing media, ideas, and the inspiration of the moment.

"I've seen a lot of death," he says, "And a lot of life, and it all goes into the work. It's not the medium, it's the artist." □

For an advance peek at Rick Berry and Darrel Anderson's upcoming book—and other digital goodies—check out their Web site www.braid.com

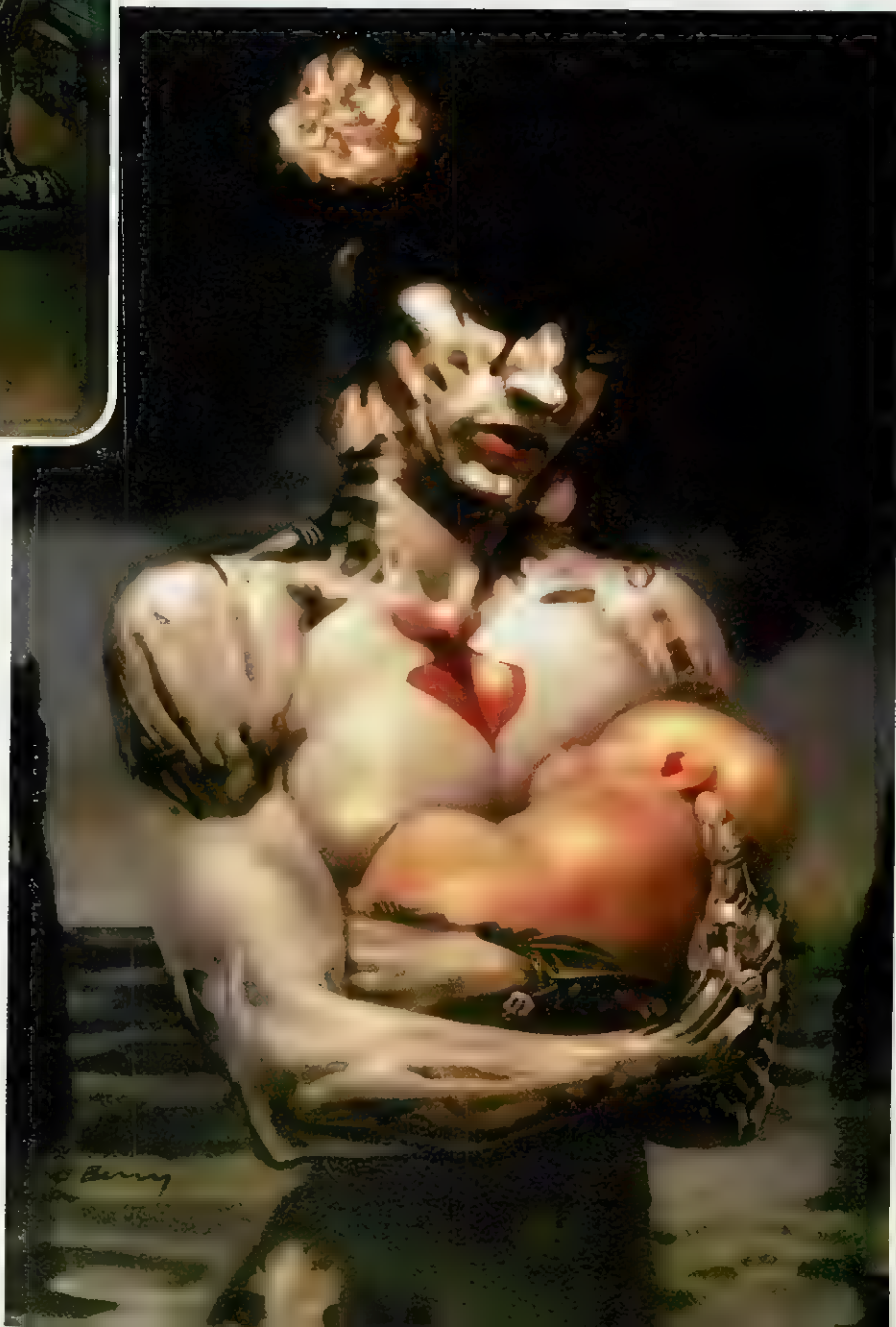


"This was the itch we couldn't scratch: how to make high-quality material output of the beautiful things we were doing on computer. But thanks to a Roland Hi-Fi Jet that prints using nonfugitive pigment inks, and prints on any substrate, we are making prints to die for. The best-looking prints you ever saw in a book can't touch these."

On his own, Berry is currently working on covers for Del Rey's *Star Wars* novels series. "Although I'll admit it's an unlikely pairing, I said yeah when they called me. I find everything interesting."

Berry's art philosophy is as bold and unusual as his creations, incorporating both the mystical and theoretical physics. "Art has allowed me to do a lot of seeing, and when you can find bold enough spirits to work with, it's allowed me to see incredible things without the protocols between human beings getting in the way.

"It took me a long time to understand that ideas were bigger than the people who participated in them. Over the years I've been asked, Where do you get your ideas from? Well, I think that's not quite the right question. It's not where you get your ideas from, it's where your ideas get you. Because, essen-



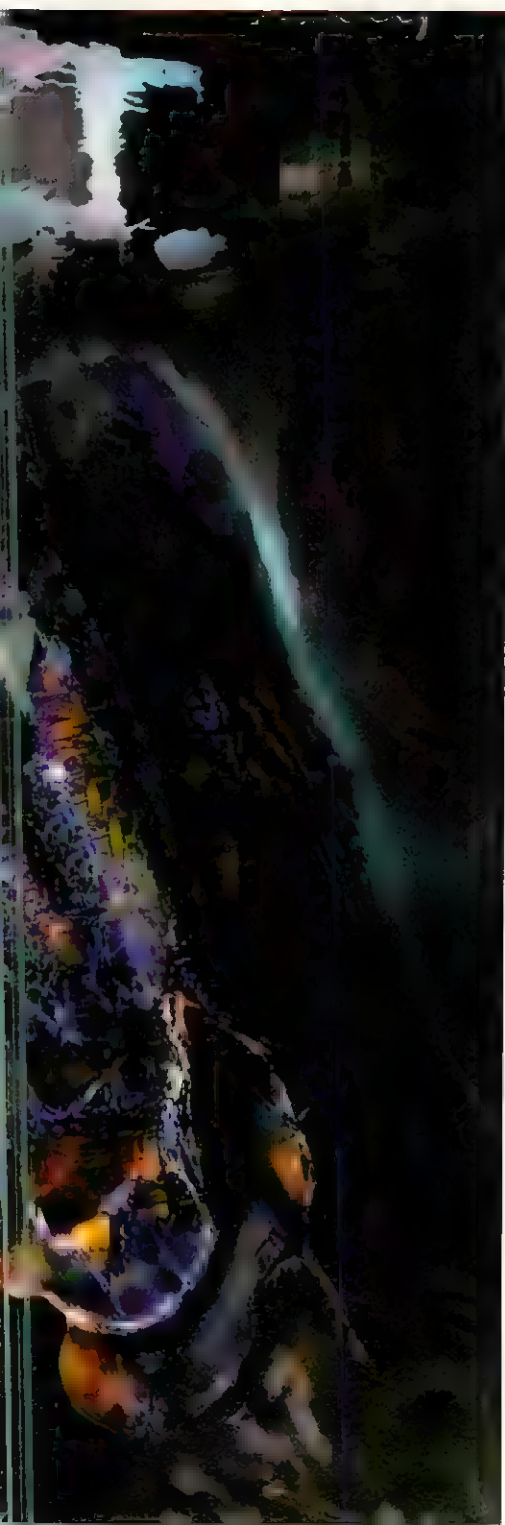
Now

THE CRIMES OF Domin



that the aliens have arrived, nothing is simple any longer. Not even murder.

i Duvall



At midnight I left my dome for the first time since arriving at Sapphire Oasis, and joined the party on the lawn. I moved from group to chattering group beneath the star-filled Saharan night, a little drunk from both the alcohol and the exalted company. I had produced no work for well over five years, and yet artists like Standish and Bartholomew and Hovana—people I had never met, and knew by reputation only—accepted me as one of them. I could tell by their polite avoidance of any conversation concerning my whereabouts for the past few years that they knew full well what I had been through.

I was standing by myself, looking out across the water, when someone touched my elbow. I turned. A rather striking woman was smiling unsurely at me. "Excuse me," she said in a strangely accented voice, "but aren't you Luke Chandler, the sculptor?"

I smiled and admitted that I was.

"I haven't seen you before at our gatherings."

I could hardly tell her that it had taken two weeks for me to summon the courage to socialize. "I've been working on a difficult piece. It's almost finished. I heard the party. So...." I shrugged.

She was small, slim. Her skin was the color of burnished copper, and I found her origins hard to place. Her high forehead and rather full lips spoke of Africa, while her straight nose and blue eyes suggested Europe. I later learned that her lineage consisted of equal parts Berber and Basque, though she was born on the colony planet of Soloman's Reach, Epsilon Aurigae III.

"I'm sorry," I said, "we haven't been introduced."

"Duvall, Domini Duvall. I work in crystals and lasers. I have a few pieces in the Ludo, Prague."

She was undoubtedly beautiful, but exhibited none of that *don't-even-look-at-me* hauteur assumed by most stunning women. In fact, as we stood beside the oasis and traded small talk, she struck me as unsure of herself, almost diffident.

I must have appeared even more frightened. I had shunned company for years, and my social skills—especially with women—were atrophied to say the least.

I covered myself by asking about her work. Her replies were technical in the extreme, and left me nodding in bewilderment.

During the period of my isolation, scientific research and the resultant technological breakthroughs had hit new heights. Already that evening I had found out that the Push now embraced not merely five of the nearest star systems, which had been the case before my retreat, but 50; that fission power was online; and that, due to advances in genetic research, many of the killer diseases of old were no longer a threat.

"But enough of me," she said. "What have you been doing with yourself over the past few years? The last exhibition I caught of yours was at the Guggenheim in '65."

I stared at her, aware of the thudding of my pulse. I had assumed that everyone knew of my recent past. Where had Domini Duvall been for the past five years?

"I... that is—" I began. "I'm sorry, I've been through a difficult period. I'd rather not talk about it, if it's all the same."

"I'm sorry. I didn't realize ..."

Shortly after that I made my excuses and left. I spent a sleepless night, not so much as a result of the memories Duvall's questions provoked—those memories were ever-present, anyway—but because, despite myself, I was attracted to the woman ... and hadn't I

By Eric Brown

Illustration by Rick Berry

vowed never to allow myself to get close to another human being, ever again?

We met most nights for the next week.

Domini was open and honest. She was intelligent in her appreciation of the arts—we talked shop for hours and hours—and wise in the ways of the world. I found myself seeking her out at every party, feeling disappointed when she was not present, jealous when she was in the company of other men.

At the end of the first week I took her hand and led her toward the water's edge. We sat and drank wine in the starlight. I noticed a hesitancy in her eyes, a pause in her voice before she ventured words. I wondered if her circumspection was that strange combination of suspicion and wariness we all feel when we find ourselves attracted to another.

"I never answered," I said, "when you asked me what I'd been doing for the past few years."

She smiled and touched my hand. "Luke, it doesn't matter. You don't have to tell me anything."

I wondered if someone had told her about me.

"Five years ago," I said, the words coming with difficulty, "I was happily married to Ella, a woman I'd known and loved for almost 15 years."

Ella was an art historian. We made New York our base for six months of the year, so that she could be close to the heart of the art world, and we wintered in the Seychelles: I needed isolation in which to produce my best work. It was the happiest time of my life. We were in love. After the uncertainties of youth, when love can be a strange and frightening enchanter—by turns beneficent and cruel—we had settled into the certainties of middle age. We knew each other absolutely, faults and all, and it seemed that our time together might be eternal.

Then Ella died in a sub-orb accident on take off from Spain. Or rather, she did not die immediately, but two days later of massive internal injuries; she died in an impersonal hospital ward, alone, while I did my best to get to her from the Seychelles.

"I think I went mad for a few

months," I said.

Domini held my hand. "How did you survive?"

"I honestly don't know. I lived from day to day." I smiled. "This sounds trite. It's what everyone says, but it's true. Looking back on it, I don't know how I coped. If I were to find myself in that situation again...." I closed my eyes. "A few months later I retreated to a monastery in Bhutan. I meditated. I renounced this world, this illusion."

"What made you return?"

"I don't know ... maybe the realization that I was playing a game. That hiding myself away was helping no one, not even myself. I'd benefited from the seclusion, the meditation ... but I needed to be creating again, to say something after so long without saying anything."

Hesitantly, self-consciously, Domini brushed a strand of hair from her face, leaned over and kissed me. Then she stood and without a backward glance returned to her dome.

I watched her go, something within me beginning to respond, after years of dormancy, to her sexuality. I was at once thrilled and appalled by this. Part of me knew that I could not be held back by the shackles of past experience; while another part, more circumspect, was loath to precipitate myself into a situation where I might face the possibility, however tenuous, of being destroyed again by loss.

One evening, an hour before midnight, Domini came to my dome. I was in the studio, working on a small experimental piece. A sharp tapping on the wall of the dome surprised me. I looked up as the entrance panel sighed toward me and slid to one side. Domini stepped through.

I was suddenly ill at ease. Her entry into my private sanctuary indicated a subtle shift in the rules of our relationship.

"Luke...?" She remained by the entrance, one hand on the door, as if at a word from me she would willingly retreat. She wore a long white gown, with a hyacinth in her hair. "Do you mind?"

"No ... please." I lay down my cutter.

She walked slowly around the studio, regarding the dozen or so pieces I had completed since my arrival. I watched her in silence.

She paused before the tableau I had titled *Hostages to Fortune*. I'd carved the figures from a slab of ebony, each one in a posture of supplication to some terrible fate—emaciated figures with scooped-out stomachs and cavities beneath their rib-cages.

One figure in particular seemed to interest her. She examined it for longer than was necessary.

"Is this your wife?" It was almost a whisper.

I crossed the studio and stood beside her, regarding the statue. My throat was constricted by an emotion I thought I'd worked out long ago. Only now, when Domini drew my attention to the fact, did I realize that I had given this female figure the subtle semblance of my wife's facial features. Her expression was drawn, torn by the realization of a terrible destiny.

I was aware that Domini was watching me. I nodded, not trusting myself to speak.

She murmured, "I think it's beautiful."

Beautiful seemed a strange way to describe a representation so harrowing, but I thought I knew what she meant.

She turned to me. Perhaps the reach of a child separated us. We had exchanged little more than a dozen words since her arrival. A silence connected us, an understanding more eloquent than any declaration.

She reached out, and with the back of her hand traced the line of my jaw, staring into my eyes. "You remind me...." she began, and her eyes clouded, as if with doubt.

"Yes?"

"I don't know...." She linked her arms around my neck and pressed herself to me. I held her, looking over her shoulder at the expression I had carved on the ebony representation of someone I had once loved. For perhaps a fraction of a second, I froze. Then, the warmth of the woman in my arms banished the frigidity of oblivion.

I'd carved the figures from a slab of ebony, each one in a posture of supplication to some terrible fate—emaciated figures with scooped-out stomachs and cavities beneath their rib-cages.

I closed my eyes and led Domini from the studio to the living area of the dome.

Later, she gently disengaged herself from me, sat up, and looked about for her gown. I reached out and with my knuckles traced the archipelago of her vertebrae. "Domini ... stay. You don't have to leave."

She found her gown. "I must. I—"

"Then come earlier tomorrow. We could meet at six for a meal."

"Luke, I have to get back."

I recalled that she had told me she was no longer working. "I thought you said you'd finished the piece?"

She smiled and locked my lips with a long-nailed finger. "I'll see you tomorrow at midnight, OK?"

And then she was gone.

This set the routine for the next few days. We made love in a raging silence, with no time or need for words. It was as if we had replaced the intellectual discourse of our very first week with a commitment of passion based on the mutual understanding we had established. I was idiotically happy. Even Domini's insistence that she leave before dawn, and could not meet me before midnight, failed to spoil my contentment.

The following morning I began a sculpture that was full of hope, of rebirth, to represent how I felt. Barely one hour into the process, the light above the door of my studio flashed, signaling that I had a visitor.

I switched off my cutter, laid it aside, and crossed to the entrance.

The glass panel slid aside and a short, thick-set man in his fifties, with incongruously long hair, stepped through as if he owned the place. I recognized him from the gatherings, though we'd never spoken. He was Douglas Wiltshire, a failed painter who now made his living as a critic. I'd heard that a bad review from Wiltshire had wrecked the career of many an aspiring artist.

"This is rather unexpected," I said.

He gazed around him, at the pieces I had created, the works in progress. Something in his expression suggested that he was not here to discuss my status in the hierarchy of Modern Art.

"Can I help you?" I said.

"Perhaps you can, Mr. Chandler." He had the disconcerting habit, while speaking, of not looking me in the eye but letting his gaze wander around the studio. "I'd like the answers to a couple of questions, that's all."

"Questions?" I almost laughed, nervous. Something in his manner intimidated me.

He strolled across to a mobile hanging from the ceiling. He gave it a casual flick. "I understand that you are—how shall I put it?—*involved* with Domini Duvall?" He moved on, bent over to examine my most recent piece.

I stared at him. "I am seeing Domini, for all it has to do with you."

He nodded, moved on to the next piece. "How long have you known Ms. Duvall?"

I was tempted to tell him to go to hell. Instead I said, "A fortnight—a little longer. Look, I don't—"

"You were not acquainted before you arrived here?"

"I've just told you, we met for the first time two weeks ago."

"Has Ms. Duvall spoken to you of her recent past?"

When I came to think about it, Domini had spoken only of her childhood on Soloman's Reach. I had asked her about her life on the Reach, trying to find out if she was attached, but she had always managed to change the subject.

I came to my senses. I was not going to allow this pompous little critic to ride roughshod over my privacy and peace of mind. "Look, I don't know who the hell you think you are—"

Without taking his eyes from a sculpture, he said, "She hasn't mentioned why she came here, Mr. Chandler?"

"As a matter of fact she's here for a working holiday."

"Are you quite sure she hasn't mentioned what happened on the Reach six months ago? She hasn't said anything that struck you as odd, suspicious?"

I stared at him. "If you're so eager to find out, why don't you speak to Domini yourself?"

"Oh, I have, Mr. Chandler. I visited her on Soloman's Reach before she left, and spoke to her then." He straightened up from his examination of a miniature, thanked me, and left the dome before I had time to gather my thoughts and question him.

For perhaps 15 minutes I paced the studio, going over what he had said and cursing myself for putting up with his imposition. What had he said? "Are you quite sure she hasn't mentioned what happened on the Reach six months ago?"

I decided to find Domini. I left the dome, crossed the greensward that separated our studios, and climbed the steps to her lounge.

I paused on the balcony. I was about to press the chime when I noticed, through the frosted glass of the sliding door, the blurred shape of two figures, facing each other across the lounge.

Domini had told me that she was here alone, and that she never had visitors. It occurred to me, for a ridiculous second, that she might be entertaining Douglas Wiltshire. A part of me wanted to enter the dome and discover the identity of her guest; another part told me that I was being paranoid.

I retraced my steps across the lawn, took refuge in my studio, and opened a bottle of scotch.

I was a little drunk by the time midnight arrived.

Domini was as punctual as ever. She slipped through the sliding door. She wore a tight black, off-the-shoulder dress. The hyacinth was in place in her hair.

She hugged me, pulled away. "You've been drinking, Luke."

I withdrew, crossed the lounge and turned. "Douglas Wiltshire was here earlier. The critic."

Her confused expression was convincing. "Who?"

"He seemed interested in you for some reason. He asked questions, how long I'd known you, what you were doing on Soloman's Reach during the past six months."

Her pretty frown deepened. "Luke, I honestly can't imagine why...."

"He said he'd visited you on Soloman's Reach. What did he want?"

Her gaze misted, as if she were trying to think back over the preceding months. "Luke, I honestly don't know anything about Douglas Wiltshire."

Smiling, she crossed the lounge and led me to the bedroom. "Let's forget about him," she whispered. We made love, and I gained the impression, by something rote in her movements, something distant in her expression, that her thoughts were elsewhere, contemplating something else entirely. I was in a semiconscious slumber hours later when she drew away from me and dressed quickly, but nevertheless I was aware of her haste, and the fact that she left without saying goodbye.

I slept badly and awoke late. By the time I dragged myself down to the studio and began work, the day was almost over. I could not concentrate on what I was doing. At the forefront of my mind was Wiltshire's visitation yesterday, and how Domini had acted last night. Unable to work, I lay aside the cutter, showered, then had a meal on the balcony overlooking the oasis. The last of daylight was seeping from the sky, and darkness was descending rapidly. A cool breeze blew in from the dunes.

Outside the flattened orb two along from mine—Domini's studio, I realized—a gang of workmen were busy conveying curved steel shields, perhaps two meters high, from the flatbed of a delivery float to the dome. I recognized the shields as the type used to protect the surface of studio walls.

I contemplated what Domini and Wiltshire had told me. Obviously, someone was not telling the truth. Either Wiltshire had visited Domini on the Reach, or he had not. I left the studio and walked around the oasis to the critic's dome.

I expected, when I reached out to take the stuffed monkey, to feel the texture of coarse fur—and my surprise was such that I almost dropped it. The surface of the animal was as smooth as glass, as if it had been petrified and varnished.

I ran up the spiral staircase to the balcony of the lounge and rapped on the rectangular viewscreen. I opened the door and stepped inside without waiting for a reply, repaying him for his own intrusion yesterday.

Startled, Wiltshire looked up from where he sat in a sunken sofa, watching a satellite screen.

I stood and faced him across the room. "What's going on, Wiltshire? I asked Domini about you last night. She doesn't remember you from the Reach. She couldn't even recall meeting you."

He glanced up from the screen, casually. "And you would rather believe her than me, Mr. Chandler?"

"What do you think?" I said. "Look, why all those questions yesterday? Why the interest in her?"

He sat back in the sunken sofa and folded his arms. "Please believe me, Mr. Chandler, Duvall was lying to you."

He gestured across the room to a genuine wooden desk. It was not the desk, however, that he was pointing at—but what sat upon it.

The stuffed monkey stood perhaps half a meter high, a red-furred primate with a wise, circular face and a skull tapering to a point. It was at once anthropoid and very, very alien. I expected, when I reached out to take it, to feel the texture of coarse fur—and my surprise was such that I almost dropped it. The surface of the animal was as smooth as glass, as if it had been petrified and varnished.

I looked to Wiltshire for an explanation.

"It's been vitrified," he said. "The process will revolutionize many aspects of the arts. Objects that undergo the process will last forever."

I replaced the unfortunate creature on the desk. I shrugged, a little uneasily. "I don't see what this has to do with Domini."

"The vitrification process," Wiltshire said, "was invented by Domini's husband, James Duvall."

"Her husband?" I said, feeling suddenly sick; then, fatuously, "she's married?"

Wiltshire raised his eyebrows at me.

"That's ridiculous! She would have told me ... she said nothing about—"

"Please ..." the critic said. He picked up a computer board from the table before him, activated it, and passed it across to me.

Still the pix scrolled down the screen. I watched with appalled fascination, hardly able to believe what I was seeing. At the same time I experienced a growing dislike of Wiltshire, who had cruelly brought my idyll to an end.

The pix showed Domini Duvall on a cantilevered balcony above a surging waterfall, against the background of a jungle. She was standing next to a tall, athletic-looking man with long black hair and a beard, who held her with a possessiveness and pride. Other pix showed the couple admiring the rainbow-spangled falls, sparkling in the light of two huge moons.

"James Duvall was a naturalist and a taxidermist," Wiltshire said. "For a long time he'd worked on the means of preserving flora and fauna which would supersede all the old methods. He was also a very good friend of mine."

I shook my head, whispered, "She would have told me.... Where is he now?" Then I recalled the figure I had seen in Domini's dome last night.

Wiltshire answered my question. "James Duvall is dead."

I stared, shocked, at the pix of the naturalist.

"Eight months ago," Wiltshire said, "he was found at the foot of the waterfall beneath his villa. His death shook the whole community. There was no suspicion of anything other than an accident. Everyone assumed he'd fallen to his death from the clifftop. When I heard what had happened, I naturally made my way to the Reach. I had no reason to think that his death was anything other than a terrible accident."

He paused, then went on. "Perhaps a month after his death, the authorities were approached by a native of Soloman's Reach, a semi-sentient distant relation of this ape." He indicated the animal on the desk. "They communicate with humans through sign language. The police brought in an interpreter and found out what had happened."

"What?" I asked.

"The alien told the police that he'd seen someone push James Duvall to his death from the balcony of his villa."

I stared at him. "Who? Who did it see?"

"According to the alien, the person who pushed him was his wife, Domini Duvall."

I felt instantly cold inside, as if the vitrification process had taken hold of me, would turn me into a statue so that my pain and anguish might be preserved forever.

Wiltshire said, "Ms. Duvall left the planet soon after her husband's death, and a private detective I hired searched the villa and found that she had taken everything pertaining to the vitrification process. He also discovered that a year before the death of her husband, Duvall left the Reach under a false identity and traveled to the Nilakantha Stardrift. The detective discovered her exact whereabouts during that six-month period; he told me where she'd been, and what she'd been doing."

I found a level surface and sat down heavily. I stared at him. "Where had she been?" I asked.

"To a planet called Mendicini, Mr. Chandler."

"Never heard of it."

"Mendicini is the Rio of the frontier," he went on. "It's the place to buy black market spare parts, biological and mechanical."

"What was Domini doing there?"

He looked at me. "The detective discovered that she had purchased a Second, Mr. Chandler."

My expression must have declared my incomprehension. "A Second?"

He nodded. "That's right—"

I almost grabbed the man in frustration. "What the hell is a Second?"

He stared at me as if I were an imbecile. "A Second is a clone. The original Domini Duvall went through the process of having herself

illegally reproduced."

"Why?" I asked, feebly. "Why would she ...?"

Wiltshire shrugged. "I don't know. The detective I hired couldn't tell me, either. He lost track of her movements after that. A month ago I traced Duvall here, to the Oasis." He hesitated. "The detective is arriving here tomorrow, to fill me in on what he's found out so far."

"Does she know you're onto her?"

"She knows the authorities suspect her," he said. "That's why she left the Reach in such a hurry."

I stared at the pattern of the carpet until it became meaningless. I could not bring myself to believe that the woman with whom I had shared such intimacies was a murderer. The image I retained of Domini Duvall as loving and compassionate did not square with the profile of her as a cold-blooded killer who had murdered her husband to gain the secret of the vitrification process.

I experienced again the numbing sense of disbelief which, five years ago, had overtaken me on hearing that my wife was dead.

"It just isn't possible. She would never..."

Wiltshire was watching me. "I'm sorry, Mr. Chandler."

"There must be some mistake. You've only the evidence of some semiliterate alien!"

"Then why," he said, "did she run away with the vitrification process?"

"I don't know ... I need time to think." I hurried to the exit, then stopped. "Why have you told me?" I asked. "I could easily warn her, get her out of here."

He was shaking his head. "No, you couldn't, Mr. Chandler. I have a man at the station, ready for just that eventuality. As for why I told you..." He paused there, staring across at me. "I like your work. I respect the man who produced it. I know what you went through five years ago, and I don't want to see you suffer another terrible loss. Take my advice, Mr. Chandler, and break off your relationship with—"

I almost ran from the dome in my need to escape the sound of his voice. I hurried around the oasis. A party was in progress and mood-music reverberated through the warm Saharan night. The sight of so many people, laughing and enjoying themselves, served only to emphasize the fact of my unease.

I recalled what Domini had said in my studio, before we made love for the first time. She had touched my chest and said, "You remind me..." with sadness in her voice. The image of James Duvall returned to me, posed on the balcony of his colonial villa.

I returned to my dome and drank steadily as the hour of midnight approached. As much as I wanted to believe that Domini was innocent, it came to me while I waited that her guilt might explain her furtive behavior. She had never ventured out before 12, had always returned to her dome well before first light.

She arrived at midnight precisely.

I was standing with my back to the entrance when I heard the door slide open. When I turned I was unprepared for the sight of her. She was radiant, illuminating the room with her presence.

She hurried into my arms before I could protest.

I had planned to stand my ground and tell her that I knew all about her past on Solomon's Reach, and demand the truth. I wanted to know if what had attracted her to me had been nothing more than the fact that I resembled her husband. But the warmth of her in my arms, the smell of her perfume, melted my resolve.

We undressed in silence and I carried her to the bed.

As we lay beneath the stars, I wondered how I might bring myself to ask for her version of the truth. She rested her head on my chest and traced my ribs with the back of her hand. Her eyes were distant, as if looking into the past.

"Domini..."

She looked up.

"Domini—why me?" I hesitated, then said, "Why didn't you tell me that you were married?"

Her expression did not change, but her eyes reacted; her pupils dilated in surprise, as if I had slapped her.

"Let's not talk about ..." she said.

I took her shoulders in my hands. "I know," I said. "I know what happened. You..." I could not bring myself to accuse her of killing her husband. "After your husband's death, you stole the vitrification process."

She was shaking her head. "No, Luke. You don't understand."

"Then tell me!"

"I ... I can't. It's too ... I don't know—"

I shook her, angry. "I want to know what happened, Domini!"

She tore herself from my grasp and pulled on her gown, not bothering with the belt but clutching it together with both hands.

There was a light in her eyes that scared me.

I stared at her, something very like hatred burning within me. "You killed him, didn't you? You murdered your husband and then stole the vitrification process." I stopped there, understanding coming to me. "But before that you traveled to Mendicini, bought a Second ... a clone.... Did you hope to blame the killing on the clone, Domini?"

She shook her head. "You don't understand," she whispered, and without another word ran from the dome. A part of me wanted to follow her, demand from her the truth of what had happened on Solomon's Reach, but another, wiser part realized that I would be unable to accept the truth.

I found the bottle of scotch and proceeded to drink myself senseless. The last thing I recalled before passing out was the light of dawn limning the arching curve of the dome.

It was early evening by the time I came to my senses; the sun was setting over the desert, filling the dome with a rich ruby light. I saw the bottle lying beside me on the floor, and the memories of yesterday—what Wiltshire had told me, Domini's reaction to my accusations—came flooding back.

I picked myself up, and only then did I see the activity on the greensward. A crowd had gathered outside Domini's dome, held back by a laser cordon. Two police hover-cars were parked beyond the cordon, their beacons pulsing scarlet blooms in the quick Saharan twilight. Wiltshire stood on the lawn beneath the pendant globe of Domini's studio, like an actor on a stage.

My stomach turned. I staggered from the dome, crossed the grass, and pushed through the press of murmuring artists. I tried to duck beneath the cordon, but a uniformed policeman stopped me.

Wiltshire turned. "It's OK," he called. "Let him through."

The cop unhanded me. I hurried across to Wiltshire. "What the hell's going on?"

"The detective I hired contacted me this morning," he said. "He found out why Ms. Duvall bought the Second."

I experienced a sick feeling in my gut. "Why?" I whispered.

He hesitated. Impatient, I tried to push past him, into the dome. He restrained me, went on, "The Domini Duvall you knew *was* the Second, Mr. Chandler—the clone. The original Domini Duvall had her identity copied and downloaded into the Second—but not the memories of her marriage to James Duvall, or what happened later."

I felt suddenly, gloriously light-headed with relief. The fact that the Domini I knew was a clone explained her surreptitious behavior, her odd attitude last night, the fact that she had failed to mention her husband.

"So my Domini isn't a murderer," I said. I stopped, then. "But why? Why would Duvall bring her clone here?"

Wiltshire gazed off across the oasis, something uneasy in his expression. I gestured to the police cars. "What's going on, Wiltshire? I want to go inside!"

"Please, Mr. Chandler ... perhaps it would be best—"

Continued on page 81

GAMES

By Eric T. Baker

Activision starts off a decade of *Star Trek* with a solid success story.



ABOVE: Fasa ably blends man and machine in Cyberware.

RIGHT: Revisit Star Trek: Insurrection in Hidden Evil.

THE FIRST GAME FROM ACTIVISION AS part of their 10 year license of the *Star Trek* franchise is *Star Trek: Hidden Evil* (PC-Windows CD-ROM, \$29.95). The game is set on the same planet as the *Star Trek: Insurrection* movie and features Patrick Stewart and Brent Spiner as the voices for Captain Picard and Commander Data. The player takes the role of Lieutenant Sovok, a human raised on Vulcan, as he tries to solve the mystery of newly discovered ruins under the planet's surface.

The best news about this game is that it was put together by Presto Studios, which is best known for making the outstanding *Journeyman Project* series of adventure games. The *JP* games feature live-action video with CGI sets, but *ST:HE* is a computer-animated affair with motion-captured characters in a third-person, top-down perspective.

Visually it looks like the *Blade Runner* video game. The backgrounds in *ST:HE* are beautifully rendered and many of them are based on the art and designs created for the movie. The characters then move through these backgrounds, Lieutenant Sovok being guided by the player's pointing and clicking.

Despite the difference in the pictures, much of the game-play philosophy that informed the creation of the

Journeyman Project games is in evidence here. For one thing, *ST:HE* is relatively short. In comparison to great, sprawling game worlds like *Baldur's Gate*, *ST:HE* is much more linear and focused. There are no side quests and the supporting players are kept to a minimum. Sovok gets on the path of the mystery and stays there.

For another thing, the action in *ST:HE* is played out on relatively small sets. Instead of walking through sketchily detailed but continuous backgrounds as in most first-person games, *ST:HE* lets the player move Sovok from one detailed "bubble" to another.

For instance, Sovok moves from one background that is the west side of a bridge, to another background that is the middle of the bridge, to a third background that is the east side of the bridge. This sacrifice of speed for detail really only falls down when there is some menace in the center of the bridge. Because the enemy is not in the same "bubble" with Sovok when he stands on the west side, the player has to move Sovok into the center bubble to face the menace instead of leaving him safely on the west side and sniping at the threat.

The third thing that Presto brings to the game is puzzles that players don't need a strategy guide to solve. Not only are the puzzles in *ST:HE* fairly straightforward, but the game doesn't let Sovok run all over the place looking for



components he doesn't need. If Sovok has run into a dead end and the player tries to take him back into another part of the adventure to look for more clues, Sovok will simply say, "No need to go back there." While that is a little frustrating, it is much less frustrating than running through bubble after bubble without getting any closer to the solution.

Finally, *ST:HE* has what was always nice about the *JP* games: a voice of aid for the hero. In the *JPs*, the voice was a little artificial intelligence that rode around in the *Journeyman* suit with you. In *ST:HE* it is Data and Picard who are almost always only a tap on the communicator away. On the downside, they aren't as helpful as the AI in the *JPs*, but they are voiced by much more famous actors.

Star Trek: Hidden Evil is an elegant adventure game built on the twin heritages of a rich back story and crowd-pleasing game play. It is not a cutting-edge, ground-breaking, parsec-spanning blockbuster. It is a good game that combines many familiar elements to give players value for their money. If you like good adventure games, and particularly if you like *Star Trek*, then you will have fun with *Star Trek: Hidden Evil*.

From a universe away and yet having a very similar manner of play comes *Septerra Core: Legacy of the Creator* (PC-Windows CD-ROM, \$39.99) from ... well, from a lot of people, but the registration sends you to Interplay's Web site, so I'll give them the credit. *SC:LotC* is also a top-down, third-person game with computer-animated characters and CGI backgrounds, but that is about where the similarities end. While *ST:HE* uses motion capture and tries to make its characters as realistic as rendering allows in order to give players the feel of a real *Star Trek* episode, *SC:LotC* takes its visual look from Japanese cartoons (anime) like *Akira* and *Appleseed*. Whipcord-thin people with large eyes and terrifically detailed spacecraft are the order of the day.

The setting is the "world" of Septerra, a planet consisting of floating continents that form seven nested spheres turning around the core of the title. Septerra is a created world where once every hundred years, the continents align to let the sun shine on the core, an event that allows whoever is holding the Twin Core Keys to unlock the secrets of the Creator's power.

As the story opens, one of the Chosen, the decadent race that lives on the outermost ring of the planet, has found a way to make the alignment happen early. The only catch is that his plan will destroy the planet and all the people on it.

The player takes the role of Maya, a strong, fully clothed heroine who lives as a Junk Scavenger on the ring of continents below the Chosen's. People in this second ring live off the trash that the Chosen throw over the sides of their continents. Through a slowly building plot, Maya is drawn into the Chosen's civil war and comes to have the fate of the planet in her hands. Along the way she finds eight companions with whom she can travel two at a time. Some of them don't get along with the others, and some are not as on her side as they first appear. Each has his/her own skills, abilities, powers, strengths, and weaknesses. This, incidentally, is another way that *SC:LotC* is different from *ST:HE*. In the *Star Trek* game, the player controls only the one character; Picard and Data pitch in every now and then. In *SC:LotC*, the player controls up to three characters, and the cast changes as the story unfolds.

Like *Hidden Evil*, *Septerra Core* is fairly linear, but it is not focused the way that the

Star Trek game is. Maya and her companions are free to wander most anywhere, looking for the clues, information, equipment, and items they need to complete the story. And the levels are much larger in *SC:LotC*. Even when you can't get off one level because you haven't tripped the proper plot points, you still have a lot more ground to wander than you are allowed in *ST:HE*. Everything is just

bigger in *SC:LotC*. The benefit is that you get a lot more hours of game play. The bad part is that some of those hours are spent wandering in circles.

Make no mistake, the plot is fun. The characters are interesting, and the setting is terrific. Once you get past the first chapter where you are chasing around this brat kid for no good reason, things really take off. *SC:LotC* contains two hundred locations: towns, cities, dark forests, and

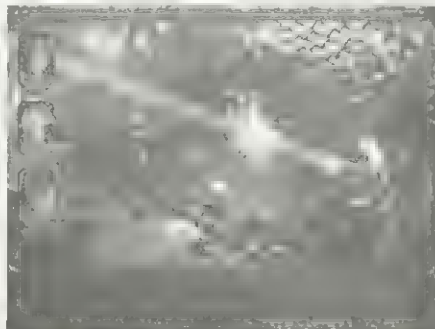
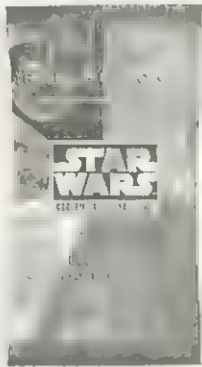
forgotten ruins. There are dozens of townspeople and 18 unique non-player characters (NPCs) who converse using 54,000 words of recorded dialogue. There are also 30 different enemy types, each with several mutations, including pirate lords, outlaws, and mechanized soldiers. There is plenty of story to find in the game, and it is worth the time for the fun of tracking it all down.

Leaving computer games for the collectible card game stacks, Decipher is out with a new set of *Star Wars* cards. They are called *Reflec-*

cyberware that originally appeared in the *Shadowtech*, *Cybertechnology*, *Neo-Anarchist's Guide to Real Life*, *Corporate Security Handbook*, *Cyberpirate*, *Lone Star*, *Renraku Arcology Shutdown*, and *California Free State* books. *M&M* is not a reprint of these books, it simply pulls all the cyber- and bioware that was scattered through them into one, easy-to-reach place and updates them to fit with the new mechanics of the third edition.

The book is divided into seven sections starting with Cybertechnology. That section covers what players have to know about cyberware, explains the rationale of essence loss (the more cyber, the less essence, the less human the character), and then lists about a hundred pieces of cyberware gear. The second section covers Cybermancy, which is the art of keeping characters alive even when they are out of essence. It is followed by the section on Biotechnology which covers bioware, the enhancements that are near and dear to the hearts of mages and adepts because they don't eat essence. Bioware does, however, have lots of other nasty side effects.

The fourth section is Nanotech. It has 20 examples of the stuff and rules on how to make it work with the other enhancements. Next is Chemistry, which covers drugs, gases, chemical weapons, poisons, toxins, and magical compounds derived from awakened flora. This is also where the rules for addiction are. Damage and Healing covers what happens when all the cool toys characters have purchased in the preceding sections are brought into violent dysfunction. The book



TOP: The latest *Star Wars* CCGs from Decipher continue to expand the known universe. ABOVE & BELOW: There's an anime look to the screen art of *Septerra Core*.

tions: *A Collector's Bounty* (18 card packs at \$5.00 each), and consist of 18-card packs containing 17 completely random cards (from the *Premiere*, *A New Hope*, *Hoth*, *Dagobah*, *Cloud City*, *Jabba's Palace*, and *Special Edition* sets) and one special foil card. In all, this series includes 114 of the best rare cards redone in a foil version. Darth Vader, Luke Skywalker, and Yoda are among the best rare cards from all the expansions that can be found in *Reflections*.

On the racks of paper-and-dice role-playing games, FASA has added *Man and Machine: Cyberware* (\$20.00, 160 pp.), a supplement for its third edition of the *Shadowrun* rules. *M&M* combines the rules, technology, items, and

ends with a whole section on Surgery, which covers the actual implanting and repairing of all this cybergear.

Taken all together, this is an impressive book. The temptation must have been to write a simple catalog of all the cybergoodies ever thought of for the *Shadowrun* world, but what Mike Mulvihill and his authors have actually created is an examination of the interface between humanity and machinery in the fictional future.

The book works best if you have upgraded your campaign to version 3.0, but even if you are still using the second edition, *Man and Machine* is worth it just to have all the scattered cyber info in one place. □

The Last Love Letter

Neither snow nor rain nor
heat nor gloom of night
shall stay future shock
from the swift completion
of its appointed rounds.

BY BRUCE BOSTON
Illustration by Janet Aulisio

THE BUILDING WAS OLD AND DILAPIDATED. THE CLERK BEHIND THE counter was pacing it on both counts. I was the only customer.

"I'd like a first-class stamp," I said.

"What?" the man grunted without looking up. He was engrossed in a palm book he was holding just below the surface of the counter.

"A first-class stamp," I repeated. "I have a letter to mail."

The man raised the palm book and snapped it shut with a practiced flick of his wrist. But not before I caught a glimpse of the image on its screen. It had definitely been pornographic.

"A letter?" he asked, eyes widening. It was as if I'd told him I'd spotted a rare bird perched upon his shoulder.

"Yes, a letter!" I held it up in front of his face. He was quickly beginning to irritate me. "You *do* sell stamps here?"

The man gave the letter a rather fishy and uncomfortable look. Ignoring my question, he came back with one of his own.

"Why don't you just send it over the Net?"

"This is a love letter," I told him, though it was clearly none of his business. "It's handwritten on special stationery. I want the person I'm sending it to, to open it and hold it in her hands. I want her to have it as a keepsake."

"If you sent it over the Net," he told me, "she could print it out and hold it."

"Not the same thing."

He contemplated that for a minute.



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"No," he grudgingly admitted, "I guess it's not."
"Could I just have my stamp, please?"
My request was swept aside.

"Why don't you use one of the commercial services? They're a lot faster, you know. And more dependable."

"The closest office is several miles," I informed him. "I'd have to take the glideway and transfer. Besides, they have a half-pound minimum. This weighs less than an ounce. Most of all, because this letter contains traditional—some would say old-fashioned—sentiments, I want it to arrive in a traditional manner."

This was a lot for him to mull over and he took his time doing it. The wrinkles on his worn mug rearranged themselves several times as such complex notions wandered through the disused byways and rustic country lanes of his cranium, stopping now and then to chat with his brain cells.

Complex notions wandered through the disused byways of his cranium, stopping now and then to chat with his brain cells.

"Are you going to sell me a stamp or not?" I finally asked.

He snapped out of his reverie.

"Certainly. Certainly. If you want a stamp, you can have a stamp. Now how much was that for?"

"A one-ounce letter. One first-class stamp. You tell me."

"Well ... now ..." he said, "that depends..."

He opened the drawer behind the counter and began pawing through it. I could see that it was mostly full of loose palm-book discs. In the midst of his search he suddenly stopped and leaned toward me, incidentally shutting the drawer in the process.

"As long as you're here," he said, nodding toward one wall, "maybe you'd like to rent a post office box? I can give you a special rate. The first hundred days are free."

His breath reeked from something that must once have been edible. Remnants of it decorated his shirt front. I stepped back to get away from him and surveyed the wall to my right. It was covered with an array of postal boxes of various sizes. Through the glass windows, I could tell that all of them were empty.

"What would I want with a post office box?"

"Well," he speculated, "you could keep things in it. Sort of like a safety deposit box. Only the back must be open."

I thought he must be joking, but he seemed perfectly serious.

"I don't want a post office box! All I want to do is buy a stamp!"

"Suit yourself," he shrugged. "No need to get excited."

He reopened the drawer and resumed his expedition. At last he held up a single loose stamp.

"Here we go," he said, "I knew it was in here."

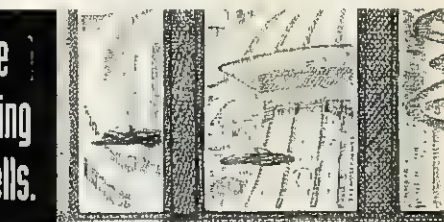
The denomination seemed too high but at this point I wasn't about to argue. I handed over my credits and took the prize. The stamp was a commemorative of the 50th anniversary of the manned Mars flight—which was issued nearly a decade ago. One corner was bent and I straightened it out. It was not a self-adhesive stamp and the gummed back was speckled with dirt. Rather than licking it, I licked a finger, then wet the stamp and applied it to the letter. To my thankful astonishment, it seemed to hold.

"And now," I said, taking out my pen, "I need the ZIP code for Darby, Pennsylvania."

"ZIP code!?"

Apparently another avian curiosity had just landed.

"Yeah, you know, five-digit number, identifies the zone of the addressee, aids in and speeds delivery."



"Oh those," he laughed, "we stopped using those years ago. They never helped that much anyway."

"All right, then, no ZIP code."

Pocketing my pen I looked around the room for a slot to deposit the letter. There was none to be seen.

"Here," I said, "this is ready to go."

The man took the letter from me hesitantly, holding it at arm's length and eyeing it with distrust. Making sure there were no fangs or claws. Or maybe a nasty stinger could come shooting out of the flap.

As I turned away he cleared his throat, causing me to turn back.

"There's something I should tell you," he said.

"What's that?"

"Well ... you know that old saying about ... through dark and cold and sleet of night ... nothing will stop these steady carriers...?"

"I know what you're talking about," I interrupted him. "But I don't think that's how it goes."

"Regardless of how it goes. We don't exactly stick to that anymore."

"That's all right. Wait for a sunny day. Deliver it then."

Again I tried to leave, but once more the phlegm rattling his esophagus pulled me up short.

"What now?"

"The thing is," he said, glancing at the floor, the ceiling, the empty postal boxes. "I'm not sure there's anybody left to deliver it."

I stared at him for a moment. He was still holding the letter in front of him. I reached out and took it back.

"Never mind," I said. "I think I'll use the Net."

"Good idea," he said. "Good idea!"

As I walked to the exit I heard the distinct click of a palm book opening. □

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July 1999

Cover Painting of *Star Wars Episode 1*. Fiction by Eliot Fintushel, Wil McCarthy, Karen Haber, Robin Wilson, Don Webb. Gallery review of Bruce Jensen. Science department on dinosaurs.

May 1999

Cover Painting of *Star Trek: Deep Space Nine*. Fiction by Lyda Morehouse, Stephen Baxter, Barry Malzberg, Robert Reed, Adam Corbin Fusco, Mary Turzillo. Science on Space Station. Gallery of Fred Gambino. Games: *X-Files*.

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CRIMES

Continued from page 75

I ignored him, some awful premonition pulsing like a migraine in my head. I hurried up the spiral staircase to Domini's studio. I was aware of Wiltshire, following.

I paused on the gallery overlooking the working area of the studio. Down below, the curved shield I had seen being delivered yesterday was in place, protecting the wall of the dome. Before it, a device like a camera or small laser cannon was set up on a tripod, directed at something hidden behind the curve of the shield.

Wiltshire was by my side.

Across the gallery a small, tanned woman was being escorted between two police officers. "Domini?" I called.

Wiltshire touched my arm. "Mr. Chandler," he said, "she's the original." There was something almost compassionate in his tone.

"Then where's my Domini?" I asked.

The original Domini Duvall swept past me without so much as a second glance, and her resemblance to my Domini, and at the same time her difference—an arrogance of bearing my Domini had never possessed—filled me with unease.

I gripped Wiltshire's arm. "Where's my Domini?" I shouted.

I turned to the gallery, gripped by a dread premonition.

Wiltshire indicated the departing woman. "The original Domini Duvall left a note down there, a suicide note, saying that she was unable to go on without her husband. She planned to take a taxi to the shuttle-port at Timbuktu—the case would then be closed. Domini Duvall would assume a new identity, be free." He looked into my eyes. "I'm sorry, Mr. Chandler."

"No!" I cried. "No...."

I ran across the gallery and around the shield, and stopped when I came face to face with the woman I had come to love.

She was perfect, of course, caught forever in her prime. She stared out at me, and only when I looked into her eyes did I see the beginnings of fear in her expression as she comprehended what the original Domini was about to do to her.

Slowly I stepped forward and knelt beside the stilled figure of the cloned Domini Duvall. A remote control lead connected the clone to the vitrification cannon, to make it look as though Domini Duvall had indeed taken her own life.

I wept as I stared into Domini's bright blue eyes, the beauty of her face preserved beneath a subtle, glazed patina.

I whispered her name, reached out, and touched the cold, hard surface of her cheek.

I sensed Wiltshire behind me. "Luke," he said, gently.

I stood, aware of something cold closing about my heart, as he took my arm and led me from the dome, out into the rapidly falling African night. □

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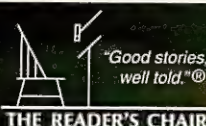
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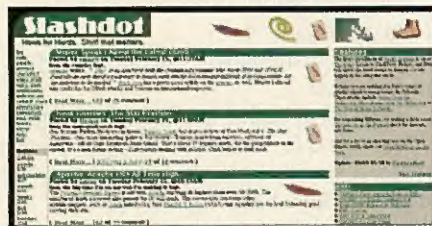
INTERNET

By Cory Doctorow

Since this is the last issue of *Science Fiction Age*, this will also be my last column. I've been telling you about Science Fiction online for over four years now, and a quick tour of the archived columns at <http://www.craphound.com/nonfic/listing.html#column> shows that a lot has changed in the intervening time.

For one thing, the Internet has gone Wall Street, by way of Madison Avenue. Slick, expensive commercial sites are the order of the day, and everyone (present company included) has a dotcom venture up their sleeves. Fan-maintained sites still proliferate, but they're overshadowed by their better-funded brethren. In this column, I've always strived to include notable fan efforts, and I urge you to seek these sites out and to let their authors know you appreciate them.

For another, the Internet has captured the popular imagination. What was once the exclusive domain of technologically sophisticated nerds is now a media darling, appearing in the plots of trashy tabloids and sitcoms alike.



Every Science Fiction writer is a futurist at heart, and many of us are making grandiose predictions about the future of the Web. Here, in my last column, I'd like to make a few of my own:

1. The Internet Gets Filters: The most intriguing efforts to improve the Web are coming from organizations like Slashdot (<http://www.slashdot.org>), ThirdVoice (<http://www.thirdvoice.com>) and Google (<http://www.google.com>), which seek to elegantly harness the opinions of the greater Web community to make predictions about which sites and documents you will find most interesting. Broad-scale efforts that apply this to the entire Web are hovering in the wings, waiting to change the way that we all interact with each other and with the morass of raw data that lives on the Web.

2. The Internet Gets Standardized: Web authors are perpetually stymied by the promise of proprietary technologies like Flash, Real, and DHTML. Implementing these technologies makes for rich, deep content but excludes those users who lack the capability to display the proprietary information. The Internet was built on rigorously defined standards, standards which have been diluted by

fast-and-loose commercial ventures. New, open standards will re-emerge, standards that allow commercial concerns to continue to turn a profit without fragmenting the 'Net.

3. The Internet Gets Browserless: The Death of the Browser has been heralded again and again, but I think it's finally upon



us. The proliferation of wireless handhelds, tickers, smart pagers, and "thin" Web devices like Webtv promise that we're headed into a world where we get our information wherever we happen to be, not just at our desks.

4. The Internet Gets Bigger: A browserless world is a world where getting online is cheap—cheap like borscht. More than half of the world hasn't ever made a phone call. Many of those people will be online long before they make that first call. Projects to wire the developing world with packet radio and dirt-cheap Web clients will explode in the next decade. Prepare for a global, multilingual Internet where North Americans are a distinct minority.

5. Content Gets Universal: Look out, Amazon and CDNOW: your days are numbered. Content—words, pictures, movies, and sound—can be cheaply and effectively delivered online without the benefit of middlemen and 'Net superstores. In a world in which everyone is a publisher with access to universal distribution, we'll need collaborative filters—see Prediction 1—not e-tailers.

The 'Net is bigger, weirder, and more important than any Science Fiction writer has heretofore imagined. It and its progeny will prove as important to our descendants as the written word. And,

like the written word, the 'Net will democratize history: We'll be able to access every version of every event, not just those that get passed down in legend or history books.

You know, I'm going to miss writing these columns. I'd like to take this opportunity to thank Scott Edelman, *Age's* yeoman editor, for his guidance and friendship over the years. And I'd like to thank you, my readers. It's been a real pleasure and honor to be your faithful correspondent over the last four years. Don't be a stranger, email me at doctorow@craphound.com. □

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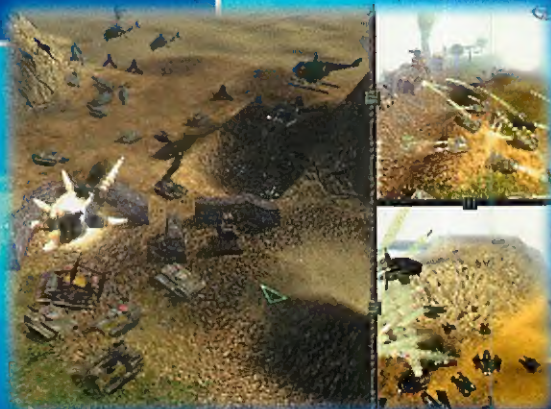
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